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THE UNIVERSITY OF ALBERTA

COGNITIVE AND MOTIVATIONAL DEVELOPMENT:

A STUDY OF VALUE CHANGE

by



TERRANCE QUENTIN PERCIVAL

A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Cognitive and Motivational Development: A Study of Value Change", submitted by Terrance Quentin Percival in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

ABSTRACT

This study was an investigation of the differential effectiveness of two types of cognitive inconsistency in producing value change for subjects classified by the Kohlberg Moral Judgement Scale (Kohlberg, 1963) as Type III (interpersonal approval orientation), Type IV (authority and social order orientation), and Type V & VI post-conventional (morally principled orientation). A value change paradigm similar to that developed by Milton Rokeach (1968) was utilized. The subjects were asked to rank order a list of values. Each subject was administered one of two treatments designed to induce either (a) inconsistency between authoritatively defined expectations and the subjects previous rankings of selected values, or (b) the perception of rational inconsistency in the relative rankings of selected pairs of values. The subjects were asked to rerank the values in an immediate post-test and again for a second post-test two weeks later.

It was predicted that Type IV subjects would change their value rankings in the inconsistency with authority condition while post-conventional subjects would change more in the rational inconsistency condition. The prediction did not hold for Type IV subjects. The data were in the right direction for post-conventional subjects on both post-tests but did not reach significance. As expected, Type III and Type IV subjects changed their rankings

considerably on the first post-test in comparison to post-conventional subjects who changed little. However, unexpectedly the amount of change dropped off considerably between post-tests for Type IV subjects in the inconsistency with authority condition, but held up well in the rational inconsistency condition. Type III subjects showed a strong tendency toward positive change in both treatments in both post-tests. Both Type III and Type IV subjects changed their rankings more than was expected in the rational inconsistency condition.

A self-esteem approach to cognitive consistency motivation was discussed, and self-esteem was predicted to be a source of differential susceptibility to cognitive inconsistency. A measure of ego-enhancement was obtained by administering a simple perceptual motor task under conditions in which the experimenter described good performances as indicating positive personality characteristics. A subject's measured tendency to seek self-enhancement was thought to be an indication of need for self-esteem. The predicted positive correlation between ego-enhancement and value change was not in evidence in either treatment when taken across the entire subject pool. However, it was predicted that this correlation would be greater for Type IV subjects than for other subjects. High positive and significant correlations were obtained for Type IV subjects in the rational inconsistency condition, but were not obtained for Type IV subjects in the inconsistency with authority condition, or for other subjects in either condition.

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INTRODUCTION

This study was an investigation of the relationship between cognitive and motivational development. A number of theorists have proposed that (a) the relative strength of different motives changes with development, and (b) more importantly, these motives provide a central and systematic organizer of the individual's functioning (Dabrowski, 1964; Maslow, 1954; Peck and Havighurst, 1960). This writer, (Percival, 1968) has suggested that those motivational tendencies outlined in the motivational aspect of the Kohlberg (1963, 1969) theory of moral development operate as such critical organizers. In this earlier study I had proposed that the differential motives implicitly underlying the justification of moral judgements at the different stages of moral development proposed by Kohlberg could also be demonstrated to be differentially effective incentives for performance on simple perceptual motor tasks. The evidence supported the proposal. The present study proposed to extend this parallel by relating the Kohlberg hierarchy of moral development to some current approaches to cognitive consistency motivation and value change. More specifically the present study focuses on the role of self-esteem as a determinant of cognitive consistency motivation and the internalization of values.

The emphasis of self-esteem represents one attempt to help clear up some of the ambiguities which have become apparent in cog-

nitive consistency theory. Although cognitive consistency theory (Heider, 1958; Festinger, 1957; Osgood and Tannenbaum, 1955) has generated much productive research, a central problem has been that of defining what is meant by inconsistency and how we recognize and manipulate it. In earlier work it seemed tacitly assumed that consistency and inconsistency could be defined in logical terms (e.g., Festinger, 1957). In more recent work it has been suggested that inconsistency, to be effective in producing change, must be defined in terms of the self-concept (Aronson, 1968). It has also been suggested that self-esteem (the individual's evaluation of his self-concept) might be a dispositional variable which mediates differential susceptibility to cognitive inconsistency manipulations (Abelson et al., 1968, pp. 347-389).

Consistent with these latter approaches, the present study emphasized the importance of self-esteem in (a) adding conceptual clarity to the definition of cognitive consistency and (b) postulating a source of motivation to maintain consistency between one's behaviour and one's attitudes and values.

The self-esteem approach to defining inconsistency differs from the self-concept approach in that it adds an evaluative dimension, i.e., high self-esteem is indicated by a positive evaluation of the self, and low self-esteem by a negative evaluation of the self. It is therefore proposed that if a self-esteem interpretation is utilized, inconsistency would be particularly effective when it is between the individual's perception of his behaviour and his ego-

ideal or ideal self-concept. Since, based on the Kohlberg theory, one would expect individual differences in value orientation (of which the ego-ideal is a part), one would also expect individual differences in the type of inconsistency that would threaten self-esteem. More specifically it is proposed that for subjects classified as Type IV in the Kohlberg hierarchy, inconsistency between behaviour and the values advocated by a "legitimate" authority should maximally motivate change, and that as the individual reaches higher stages (Kohlberg's Types V and VI) logical inconsistencies become maximally effective.

With these basic propositions in mind, we can now proceed to a more detailed consideration of the background out of which the present study developed.

Kohlberg's Theory of Moral Development

Kohlberg (1963) administered 10 hypothetical moral dilemma situations to middle class Chicago suburban boys, age 10 to 16, in tape-recorded interview sessions. The situations conflicted legal-social rules and the demands of authority against concern for human needs and the welfare of other individuals (five of these situations are presented in Appendix A). A developmental trend toward choice in favour of the latter two alternatives was expected on the basis of Piaget's (1948) theory of moral development. These developmental trends in choice were not found, instead the reasons or justifications given for the choices turned out to be developmentally meaningful. After care-

ful analysis of each protocol six developmental stages were defined. Each reason or justification was carefully classified and then clustered into stages according to a double criterion of both logical and empirical consistency. In order to exhibit logical consistency the reasons or justifications classified at that stage had to form a conceptually integrated whole. In order to exhibit empirical consistency, the content or reasons had to form empirical clusters and these clusters or stages had to exhibit an invariant developmental sequence. The concept of an invariant developmental sequence states that development progresses through the stages in order; even though the age at which a stage is attained may vary from individual to individual. The attainment of a higher level stage presupposes the attainment of lower level stages. The content of each stage builds on the content of the preceding stage. Each stage is a reintegration or reorganization of the new content with the content of the preceding stage.

Thus the Kohlberg theory postulates an invariant sequence of developmental stages in which the attainment of a particular stage is non-age-specific. As such it fits what has been termed the hierarchic model (Kohlberg, 1969; Loevinger, 1966). Empirically the theory meets the specifications of the "hierarchic model" quite successfully as indicated in a longitudinal follow-up of the original sample and by cross-sectional age trends from five distinct cultures: the U.S.A., Taiwan, Mexico, Turkey, and Yucatan (Kohlberg, 1969). The age at which any stage is reached varies from culture to culture but the age

trends in each culture show the same sequential ordering of stages.

As indicated in the left hand column of Table 1 (see page 7), the stages are organized into three levels: a premoral level (Types I and II), a conventional level (Types III and IV), and a post-conventional level (Types V and VI). A brief description of each stage is presented below:

Punishment and obedience orientation. Type I is characterized by a general set to avoid punishment by authority. Value judgements emphasize physical attributes (power, status, monetary worth) or physical consequences of the act. Authority is defined as someone having greater age, size, or power, and thus having greater worth and special rights and privileges. Right and wrong are defined in terms of taboo rules and projective labels for deviant acts.

Naive instrumental relativism: Type II is oriented toward instrumental satisfaction of the self's needs. Moral values are based on an orientation of hedonistic relativism. Right action is defined as relative to the individual's own needs regardless of conflicting demands. Authorities are thought to be self interested like anyone else and to use their power to manipulate others for their own benefit. Rules are prudential directives to help one meet one's own needs.

Social approval maintaining morality. Type III is oriented toward gaining social approval by pleasing, helping, and conforming to the expectations of significant others. There is an exaggerated need to maintain inter-personal relationships. Value judgements are based on a customary natural value orientation in which there are stereotyped conceptions of what most people prefer or what people "naturally" prefer. An authority is seen as having superior wisdom and virtue and is someone to be imitated. Right and wrong are defined in terms of stereotyped role expectations, conformity to which should gain approval. Rules prescribe positive virtues, motives, and goals--judgements are often made according to the "niceness" or "meanness" of the motive displayed.

Authority and social order maintaining morality. Type IV is oriented toward meeting the expectations of legitimate authority and maintaining the given social order for its own sake. Right and wrong are defined categorically in terms of deontological rules which are perceived as part of the social order. This categoricalness implies a kind of moral realism in the evaluations of conduct (an act is wrong because it is wrong). Rules are obligatory behavioural prescriptions. There is an exaggerated concern with law and order and a general distrust of human nature in the absence of such order.

Social contract orientation. Type V is oriented toward making rational choices and meeting contractual or legally defined obligations. In contrast to the categorical orientation of Type IV, the emphasis on rationality is the attribution of purposiveness to moral standards. There is a recognition that one's own welfare is linked to the welfare of the community. Legal rules are believed to function to maximize community utility. This general orientation is that of social relativism of values, i.e., values are the result of an initially arbitrary process of setting up a pragmatic and workable social unit to maximize utility. Rules have a pragmatic function and are changeable.

Individual principled morality. Type VI is characterized by a high degree of internalization and the development of a value orientation which features the attribution of universality to principles of choice. The emphasis is teleological. Morality is seen as an individual matter--one is motivated to act in accordance with one's own moral principles. Frequently mentioned values are equality, mutual trust, human life, etc. There are well developed concepts of justice and often an orientation towards fighting injustice.

The Proposed Motivational Hierarchy

The proposed motivational hierarchy (Percival, 1968) was based on the content of the motivational aspect of the Kohlberg theory and is presented in Table 1. At the pre-moral level of the Kohlberg

theory a hedonistic orientation towards avoiding punishment and gaining reward is proposed. This is followed at the conventional moral level by two types of social motivation: an orientation towards social approval (Type III), and an orientation towards meeting the expectations of legitimate authority and the social order (Type IV). At the morally principled level, an orientation towards making autonomous choices in terms of self-accepted values is proposed.

Table 1

Kohlberg Type	Motivation
Pre-moral Level	
Type I. Obediance and punishment orientation	avoiding punishment
Type II. Instrumental hedonistic relativism	gaining instrumental reward and satisfaction
Conventional Level	
Type III. Social approval maintaining morality	gaining social approval, especially of significant others
Type IV. Authority and social order	meeting the expectations of authority and the social order
Post-conventional Level	
Type V. Social contract	autonomous value choice--emphasis on being rational, consistent, purposive, etc.
Type VI. Individually principled	autonomous value choice-emphasis on self-accepted values as principles of choice

Percival (1968), as mentioned earlier, investigated the empirical parallels between the proposed motivational hierarchy and the different stages of the Kohlberg typology. The study was limited by the availability of subjects to Type III, Type IV and post-conventional (mostly Type V) subjects. The subjects (general psychology students) were administered two continuous performance tasks which they were required to perform simultaneously. The tasks were designed so that it was impossible to attend fully to both at the same time. Three experimental treatments were designed to manipulate task performance. In each treatment performance on one task was motivated by greater opportunity for monetary reward, and performance on the other was motivated in one of three ways: by interpersonal approval (approval of other members of experimental group for good performance), by the expectations of legitimate authority (stated expectations of the experimenter that subjects work hard on task), or by choice in favour of distributive equality (good performances by subjects on task meant that reward money would be divided up equally, otherwise money would be given to best performer on other task as in other treatments). Standard score differences indicated the effectiveness of each incentive relative to monetary reward. As predicted Type III subjects' performances indicated the effectiveness of interpersonal approval while Type IV performances indicated the effectiveness of the expectations of authority. Post-conventional subjects tended to choose in favour of distributive equality while conventional subjects chose to maximize their opportunity for greater monetary reward (as indicated by good

performances on the cooperative and competitive tasks respectively).

Percival (1969) ran a small follow-up study with a similar methodology. The main differences were that (1) only Type III and Type IV subjects were used and (2) only one treatment was used in which interpersonal approval for performance on one task was conflicted with Experimenter expectations for performance on the other task. The predicted interaction was confirmed. The Type III subjects' performance scores were higher for the approval task while Type IV performance scores were higher for the authority task.

The research to date, therefore, generally supports the proposal that a sequence of motivational incentives parallel the cognitive developmental sequence of the Kohlberg theory. If one is willing to accept, tentatively at least, the proposal of parallel cognitive and motivational development, then future research aimed at making conceptual and operational refinements and uncovering some of the determinants of the sequence is in order. The proposals of this study were intended to be a step in that direction.

The types of motivation proposed for the first three types of the Kohlberg theory were those of externally controlled incentives. They seem to be consistent with the more traditional psychological concepts of needs, drives, impulses, reinforcement, etc. These concepts have in common an emphasis on immediate stimulus parameters (internal or external) which activate the organism to seek some type of immediate gratification. How and why these motives develop and operate remains an important problem for future research, but is not the focus of the

present study. For the present purposes, it is sufficient to point out that cognitive development at these stages may, to a large extent, be explained in terms of the concept of differentiation or discrimination learning, i.e., the child learns to make relevant discriminations in order to attain immediate externally controlled gratification.

The type of motivational concepts previously proposed for the first three stages (e.g., drives or needs) do not appear relevant for the fourth. For example, it is difficult to conceive of an "authority drive". Kohlberg Type IV subjects appear to be a paradox of both internal and external control. On the one hand they are oriented towards their perception of authoritative expectations and the social order, and on the other hand they project internalized feelings (responses to moral dilemma situations) of compulsion (duty and guilt) towards obeying such expectations. Clearly, new motivational concepts are needed. Two concepts are proposed: that of cognitive consistency motivation and that of a value system. In brief, it is proposed that it is the Type IV individual's perception of authoritative expectations and the social order that define his value system, and it is the inconsistency between this individual's cognitions regarding his behaviour and his value system that provides the source of motivation.

It is this relationship between cognitive consistency and systems of values that is the focus of the present study. Both of these concepts appeal to psychologists because they have a great deal of

general explanatory value; however, this very generality provides difficulties in reducing these concepts to useful operationalizable constructs. Before dealing with more specific proposals, an attempt will be made to lend greater clarification to these concepts.

Cognitive Consistency Motivation

There are, of course, many theories of cognitive consistency, but one of the most powerful is that of cognitive dissonance (Festinger, 1957). Essentially the theory specifies that when two cognitions are in a dissonant relationship, i.e., psychologically inconsistent, the individual is in a dissonant state which can only be alleviated by changing one of the cognitions. A criticism of dissonance theory is that it is difficult to specify what pair of cognitions are dissonant and that this problem centers about the difficulty in specifying what is meant by inconsistency. The basic definition of dissonant cognitions is: "Two cognitions are dissonant if, considering these two cognitions alone, the opposite of one follows from the other (Aronson, 1968, p. 9)." Aronson pointed out that a major source of ambiguity centers about the phrase "follows from," and suggested a "rule of thumb" to determine when dissonance will occur: "dissonance occurs when a cognitive expectancy is violated".

Whatever the problems, dissonance theory has stimulated much productive research. The most convincing dissonance paradigms commit the individual to an act (i.e., the individual has committed the act and hence cannot readily change the cognition, "I have behaved...") that

is inconsistent with some component of his cognitive system (e.g., beliefs, attitudes, values, etc.). Even in these cases it is not always clear what cognitions are inconsistent. Consider the following discussion by Aronson (1968):

In the experiments on counterattitudinal advocacy, for example, I would suggest that it is incorrect to say that dissonance existed between the cognition 'I believe the task is dull' and 'I told someone the task is interesting'. This is not dissonant for a psychopathic liar--indeed, it is perfectly consonant. What is dissonant is the cognition 'I am a decent, truthful human being' and the cognition 'I have misled a person'... In the initiation experiments, I would maintain that dissonance does not exist between the cognition 'I worked hard to get into a group' and the cognition 'The group is dull and stupid.' Recall that for a 'schnook' these cognitions are not at all dissonant. What is dissonant in this situation is the cognition 'I am a reasonable and intelligent person' and the cognition 'I have worked hard for nothing'. (Aronson, 1968, p. 24)

Aronson specified the inconsistent cognitions as a self-concept (a generalized set of cognitive expectancies) and a conceptualization of behaviour. We can infer that neither the "schnook" nor the psychopathic liar would experience dissonant cognitions.

Let us, however, consider another possibility. Even though our schnook does not conceptualize himself as a reasonable, intelligent human being, he may well believe that he should be a reasonable, intelligent, human being, and this cognition would be in a dissonant relationship with the individual's conceptualization of his behaviour. In this latter case, the inconsistency is between the ego-ideal (ideal self-concept) and behaviour. This type of inconsistency was proposed

as early as 1914 by Sigmund Freud who conceived the ego-ideal as part of his superego construct. Festinger and Bramel (1962) noted that while psychoanalytic theory has stressed the individual's concept of what he should be (ego-ideal), dissonance theory has placed more emphasis on his concept of what he is (self-concept).

Aronson's schnook, if he incorporates being a reasonable and intelligent person as part of his ego-ideal, has a dissonant relationship between his self-concept and the ego-ideal. This discrepancy between the self-concept and the ego-ideal may reasonably be construed as a determinant of self-esteem. A large chronic discrepancy reflects a negative self-evaluation, e.g., a schnook, and may provide a chronic source of inconsistency within the individual's cognitive system. When behaviour is consistent with the individual's values (ego-ideal), the resultant positive self-evaluation should have the effect of reducing this inconsistency between self-concept and ego-ideal and thus increase self-esteem. Likewise, when behaviour is inconsistent with the individual's values, the resultant negative self-evaluation should tend to reduce self-esteem. Under conditions of low self-esteem, any loss of self-esteem should be particularly threatening and Aronson's dissonant cognition "I worked hard for nothing" should have a greater effect on the schnook than on the person who believed himself to be reasonable and intelligent. (This expectation should hold for the majority of cases, but not for every case. In some cases of extreme and chronic low self-esteem the individual may have accepted his low self-concept to the extent that behaviour discrepant with the

ideal would no longer be as threatening.)

Dissonance theory has dealt only with pairs of cognitions. However, the type of inconsistency motivation proposed in the preceding paragraph requires consideration of three sources of cognitions: the self-concept, the ego-ideal, and conceptualizations of behaviour. When the discrepancy between the self-concept and the ego-ideal is large, self-esteem is low, and behaviour inconsistent with the ego-ideal should be particularly threatening. When the discrepancy between the self-concept and ego-ideal is small, self-esteem is high, and behaviour inconsistent with the ego-ideal should also be threatening, but perhaps is not as threatening because of the stable relationship between the self-concept and the ego-ideal. (Under conditions of higher self-esteem, the need for self-esteem is not as great and behaviour discrepant with the ego-ideal, while it may cause some negative feelings or guilt, should not seriously threaten the individual's self-esteem).

It is important at this point to recognize the distinctions that are being made. Cognitive dissonance theory as presented by Aronson (1968) emphasized the role of the self-concept. The self-concept provides a set of cognitive expectancies for the self's behaviour. Behaviour discrepant with the self-concept violates the cognitive expectancy and causes dissonance. In contrast the present proposal, like psychoanalytic theory, places the emphasis on the discrepancy between the individual's conceptualization of his behaviour and his values. A discrepancy would be assumed to cause a perception of the self in

this particular situation that is negative. This acute negative self-evaluation is proposed to interact with the more stable disposition of self-esteem. In most cases, those individuals with low self-esteem should be more threatened by this acute negative self-evaluation than those individuals with high self-esteem. This emphasis of a self-esteem interpretation of consistency motivation is not original in the present proposal, but it rather represents a major trend (Abelson et al., 1968, pp. 347-389.)

Rokeach (1968) postulated a motive for consistency within value-attitude systems which he defined primarily in terms of self-esteem. He developed a procedure by which he could attempt to point out to subjects inconsistencies already existing in their own value-attitude systems. He reasoned that this should be particularly threatening to self-esteem and likened the procedure to the subjects undergoing an X-ray examination revealing previously unsuspected and unwelcome medical information. Michigan State University students were asked to rank a list of twelve values and were then shown a composite ranking of these values obtained from other students. In order to arouse feelings of inconsistency, the students' attention was drawn to the composite rankings for two values: "freedom" and "equality". The experimenter reminded them that, on the average, students ranked "freedom" 1 and "equality" 6, and stated, "This suggests that Michigan State students in general are more interested in their own freedom than they are in freedom for other people." The students were then instructed to compare their own rankings with the composite rankings and indicate their degree of satisfaction-dissatisfaction with their own

rankings. Highly significant change in the subjects' rankings of the value equality was obtained three weeks and three months later. The degree to which the subjects expressed dissatisfaction was positively related to the amount of change.

Thus the Rokeach study found a relationship between the subjects' reports of self-dissatisfaction and the amount of value change. Rokeach's explanation for the effectiveness of the manipulation in inducing self-dissatisfaction depended on the subject's perception (at the suggestion of the experimenter) of inconsistencies in their own value rankings. Some question remains as to the nature of the inconsistency. Was it rational inconsistency? The discovery of rational inconsistency in one's values should cause self-dissatisfaction only if the person has a positive expectancy of, or values being, rational, consistent, logical, etc.

But what of subjects who do not place a great deal of value on rationality. Perhaps another explanation is possible. The experimenter, as a psychologist, was a legitimate authority whose statements, while pointing out inconsistencies, were also quite condemning of the composite rankings. By implication he was also condemning by authoritative disapproval any subject who ranked equality low in relation to freedom. The experimenter presented new authoritative expectations of how the subject's value rankings should be ordered under conditions that would be expected to threaten the subject's self-esteem. Would the perception of inconsistency have been effective without this impactful authoritative backing?

Recall the previous discussion in which it was suggested that Kohlberg Type IV subjects seem to have developed a system of values which they perceive as defined by authority and the social order. It would be reasonable to predict that for these subjects the authoritative expectation interpretation of the Rokeach manipulation would be particularly effective in inducing dissatisfaction and in producing value change.

In contrast, Kohlberg Type V subjects seem to place a great deal of value on rationality; in response to moral dilemma situations they emphasize making rational judgements, and evaluating consequences according to utilitarian logic. Pointing out inconsistencies within their own value system should be particularly effective in inducing dissatisfaction and in producing value change. It seems reasonable to expect that the Rokeach manipulation with authoritative backing removed should be most effective for the more mature Type V and VI subjects.

Value Systems--Some Considerations Regarding Their Functioning and Development

An Attribution Approach to Conceptualizing Values

The preceding discussion of cognitive consistency motivation utilized the concept of a value system and an ego-ideal. The two were used more or less synonymously, the ego-ideal being conceptualized as a particular domain of an individual's value system, i.e., that part of the value system that makes reference to, or is relevant for, the self. As stated previously, the concept of a value system has a great deal of explanatory potential but needs

further work to acquire conceptual clarity in operational terms if it is to become a useful psychological construct. Some considerations toward this objective are presented in the following paragraphs.

The concept of value is linked in choice behaviour; we say that an individual makes a "value choice" or a "value judgement". More precisely, the value construct refers to a predictable pattern of choice behaviour across situations. Given two sets of mutually exclusive alternatives A and B, such that a person predictably chooses A over B, one can say that the person values some attribute of A more than B. This latter statement implies an inference or an attribution on the part of the psychologist utilizing the value construct, for he must be able to state what cognitive dimension discriminates the set of alternatives A from B in order to predict future choices.

The preceding definition specified the process (or operations) which might be utilized by a psychologist to attribute a particular value to another person. If the psychologist were to ask a person what his values are, the psychologist would have to assume a similar process of attribution on the part of the individual towards himself. Such an assumption would not seem to be unreasonable, and in fact would be consistent with the proposals made earlier in this paper with respect to cognitive consistency motivation, i.e., the earlier proposals assumed that an individual upon observing his behaviour would tend to formulate a self-perception or self-attribution which might or might not be consistent with his ego-ideal. The assumption is clearly that

the individual has conscious awareness of the ideal (though it may not be well formulated) to the extent that he can evaluate his self-attributions.

The method developed by Rokeach (1968) to assess an individual's values is especially interesting, in this respect, because of its simplicity. Rokeach essentially just asked subjects what their values were. After extensive pilot work he formulated a list of value labels that he thought would represent the basic values subjects attributed to themselves, e.g., freedom, equality, cleanliness, etc. Two types of values were defined: terminal values, those that define end states of existence, and instrumental values, those that define personally or socially preferable modes of conduct. A scale to measure values was developed and consisted of a list of terminal values and a list of instrumental values. The subjects were simply instructed to rank the values in order of importance. These rank orderings proved to be relatively stable with test-retest reliabilities of .70 after seven weeks. The value rankings also appeared to have some predictive validity. For example, subjects' rankings of the value "salvation" were found to be related to frequency of church attendance, and rankings of the value "equality" were found to be related to participation in, and sympathy toward, civil rights demonstrations.

Some Proposals Regarding the Acquisition of Values

The motivational hierarchy proposed by this writer (Percival, 1968)

marked a sequence from a motivational orientation towards external reinforcements (punishment and reward as gratification of needs or drives) to a motivational orientation towards internalized reinforcements (cognitive consistency). The present proposal tends to view this process of internalization as occurring primarily between the Type III and Type IV stages of the sequence. Type III subjects seem to be motivated externally while Type IV subjects seem to be motivated internally to behave consistently with their value system. Basic to this proposal is the assumption of the self-acceptance or internalization of values by the individual, i.e., the proposal defined an important source of cognitive inconsistency in terms of an internalized ego-ideal. The process of internalizing or accepting values is therefore a relevant consideration.

This study utilized a methodology of value change (the change in the relative importance assigned to different values as a result of experimental treatments). As such, it was an attempt to operationalize in the laboratory, conditions analogous to some which might occur in the socialization setting. Internalization is inferred when socialized behaviour occurs in the absence of external control. In attitude change terminology, behaviour (endorsing attitudes) consistent with the advocated position may represent either compliance or internalization. It is only when such behaviour persists in the absence of the manipulation that internalization can be attributed. In order to make this distinction, the present study assessed value change in a test-retest paradigm. The conditions which might influence internalization are therefore a relevant consideration for the present study.

Several findings from studies of cognitive dissonance seem to have some explanatory relevance for this process of developing an internalized value orientation. Cognitive dissonance effects are not as great when individuals are given sufficient justification as to why they should engage in dissonant behaviour. (Sufficient justification may involve forced compliance or simply enhanced experimenter persuasiveness by giving subjects several "good" reasons why they should comply.) In contrast, when subjects are given more choice as to whether to comply and are given insufficient justification, dissonance effects are enhanced (Insko, 1967, pp. 252-277).

A series of studies (Aronson and Carlsmith, 1963; Freedman, 1965; Pepitone, McCauley, and Hammond, 1967; Turner and Wright, 1965) in the cognitive dissonance tradition are particularly relevant. All studies were variations on the basic paradigm of: a) assessing children's preferences for playroom toys, b) using either mild or severe threat to forbid the children to play with an attractive toy while the experimenter left the room, c) reassessing the children's preference for the toys, and d) (in some studies) retesting the effectiveness of the manipulation several weeks later. Three of the above studies found a tendency for the children to devalue the forbidden toy following mild threat and to increase their evaluation of the forbidden toy under severe threat. Only the Freedman (1965) study failed to find this effect; however, the results of this study can be partially explained by the fact that the forbidden toy (a mechanical robot) was extremely attractive relative to the other toys. Both the Freedman (1965) and Pepitone, et al. (1967) studies found less of a

tendency to play with the forbidden toy in a subsequent retest situation under conditions of mild threat than under conditions of severe threat.

De Charms (1968) has pointed out that under conditions of external control the subject may be made to feel like a "pawn"--he may perceive himself as not having any choice or control over his outcomes. Under these conditions the behaviour loses self-relevance. The individual does not feel responsible for his conduct. On the other hand, when the individual is given a choice in the absence of external control, he may be made to feel like an "origin". He may feel that he is the causal agent in determining his conduct. Under these latter conditions, the self-evaluative interpretation of cognitive consistency motivation would be of particular importance in mediating attitude or value change.

Just as the perception of freedom of choice may enhance dissonance effects, the perception of a lack of psychological freedom may have effects of its own; it may instigate activity aimed at regaining or preserving psychological freedom. This is essentially the point of view presented by Brehm (1966) as a theory of "psychological reactance". The basic premise is that, given that the individual has a number of alternatives available to him which might be called "free behaviours", any reduction of the number of alternatives is a threat to psychological freedom and will set up conditions of psychological reactance in which the individual will be aroused to regain what freedom has been lost and to preserve freedom of choice

against other such possible interventions. This may have the effect of enhancing the restricted alternative, e.g., "The grass always looks greener on the other side of the fence." The intensity of reactance may be hypothesized to vary as a function of a number of variables. For example, the theory states that reactance should be greater if the eliminated alternatives have greater importance to the individual, or if the intervention implies the possible loss of future freedoms. Reactance should be less if some legitimate reason or justification is available for the intervention, etc.

The theory of psychological reactance fits into the present writer's proposals because of its emphasis on the functions of self-maintenance or self-preservation. Brehm (1966, p. 2) points out the survival value of "valid knowledge about oneself and the environment" and the "freedom to choose among different behavioural possibilities." Just as the present proposal emphasizes the importance of the threat to the self that occurs when an individual chooses to engage in behaviour that is inconsistent with his cognitive expectancy of how the self should behave, psychological reactance may also be proposed to be a function of the threat to the self which results when the ability to function freely is interfered with.

Thus the perception of relative freedom of choice in the relative absence of external controlling parameters would appear to be a critical variable in the development of attitudes and values. It is perhaps a safe assumption that the child from an early age is

taught value concepts by socializing agents. At least the findings of Piaget (1948) and Kohlberg (1963) would suggest that the child has knowledge of certain types of value content which he can utilize in responding to moral dilemma situations. However, it is well established by such studies as those of Hartshorne and May (1928-1930) that knowledge of moral rules and values is not sufficient to predict conduct consistent with such values or rules. That the child can learn rules or values as a function of reinforcement by socializing agents does not appear to be a sufficient explanation. How these reinforcements become internalized as negative or positive feelings of self-criticism (guilt) or self-satisfaction seems to be the critical question. The proposal suggested by the preceding paragraphs is that internalization is a function of choice behaviour in the relative absence of perceived external control. More specifically, relatively stable patterns of choice behaviour would be expected to lead to relatively stable means of justifying or evaluating such behaviour. One would expect the cognitive content necessary for such justifications to already be available in the child's repertoire as a result of past learning. Just as each choice would be expected to produce some revaluation in favour of the chosen alternative, it would also be expected to alter the probability of future choices. Hence in cyclical fashion stable patterns of justification may be established.

Justifications are evaluative. They may reflect an evaluation of some intrinsic property of the act itself, its relation to social

norms, or its consequences for the self and others. Perhaps one of the best examples of the variety of reasons that can be given for choices in a social conflict situation are responses to the moral dilemma situations utilized by Kohlberg (1963). The content of these moral judgements reflects modes of attributing values to persons, acts, and events, mechanisms for denial of conflict, motives such as approval or guilt, conceptualizations of rules, rights, authority, and positive and punitive justice. Value concepts, as such, appear to be embedded in, and dependent on, other types of cognitive content.

The Kohlberg theory postulates a developmental sequence in the type of justifications utilized by the child. In the first few stages these justifications reflect the salience of external reinforcements in the form of physical punishments, physical rewards, and social approval. They may to a large extent simply represent complex patterns of discriminative stimuli utilized to gain reinforcement. The child's social conduct and the resultant justifications may largely be a matter of habit maintained by partial reinforcement. In other words, it may be the child's motivational orientation that plays a prominent role in organizing his cognitive content, and changes in motivational orientation (type of external reinforcement) may well produce sweeping changes in the organization of cognitive content.

At the point where habit becomes conscious awareness of choice, the motivational forces of cognitive consistency may result in the

internalization of value content as justifications. Once such content becomes internalized, changes in value content may primarily be due to cognitive processes in the service of maintaining consistency. Self-esteem, for example, may be proposed to be an important motivational force in the service of cognitive consistency, i.e., it is a function of the consistency between two cognitive components, the ego-ideal and the self-concept. As the individual increases his awareness of his own value content, he should also discover inconsistencies and attempt to either resolve them or defend himself against this awareness. Through this process of integration the individual should increase the extent to which he has differentiated and clarified his value concepts. Thus the justifications utilized in response to moral dilemma situations at the Kohlberg conventional level of development reflect the individual's perception of the established social values, and at the post-conventional level the justifications reflect at first (Type V) a recognition and concern for the inconsistencies and hypocrisies of the conventional values, and finally (Type VI) the formulation of abstract values as principles of choice.

Specific Proposals

This study will attempt to extend and clarify some aspects of the motivational hierarchy proposed by this writer (Percival, 1968) to parallel the cognitive developmental sequence of the Kohlberg theory of moral development. The types of motivation proposed for the first three stages of types seem to depend on externally con-

trolled incentives. Kohlberg Type IV subjects seem to be externally oriented in that they rely on their perceptions of authority and the social order to define ideal standards of conduct, but they seem to be internally motivated to behave consistently with these ideals or values. This proposed form of consistency motivation is predicted to be related to self-esteem, i.e., behaviour consistent with the individual's values should lead to positive self-evaluations and self-enhancement, and behaviour inconsistent with the individual's values should lead to negative self-evaluations which threaten the individual's self-esteem. At the post-conventional level, Type V and Type VI subjects are oriented towards making autonomous value choices in terms of self accepted, internalized values. They should also be motivated to behave consistently with their values, and since they appear to place a great deal of value on rationality, they should attempt to maintain rational consistency within their own value-attitude systems.

A paradigm similar to that utilized by Rokeach (1968) was utilized to manipulate two types of inconsistency: (A) inconsistency between the individual's behaviour (value rankings) and authoritatively defined expectancies, and (B) the perception of rational inconsistency within the individual's own value system. An interaction between Type IV and post-conventional subjects and the manipulations above was predicted: greater value change was predicted for Type IV subjects under conditions designed to manipulate inconsistency with authoritatively defined expectancies while greater change was predicted for

post-conventional subjects under conditons designed to manipulate awareness of rational inconsistency.

Value change for Type III subjects was also assessed under both types of inconsistency manipulations, but no specific predictions were made. This writer is quite uncertain as to what extent Type III subjects are internalized in their moral orientation. The predominant orientation is towards classifying acts as "good" or "bad" on the basis of whether or not they are approved by significant others. In the absence of external control, however, it is uncertain as to whether the knowledge that the act would be disapproved is sufficient. It may be that the Type III orientation towards compliance to external control tends to inhibit the development of consistent systems of internal control.

The effectiveness of manipulations designed to induce cognitive inconsistency has been proposed to be a function of self-esteem. A procedure for measuring the tendency towards ego-enhancement was taken to be an indication of the subject's need for self-esteem, and the results of this manipulation were predicted to be correlated with value change. The procedure utilized a simple perceptual motor task which the Experimenter described so that good performances would be thought to be ego-enhancing. In general it was predicted that the tendency to seek ego-enhancement would be positively correlated with the amount of value change. Such a finding would support the self-evaluative interpretation of cognitive consistency motivation previously proposed. In addition it was predicted that this particular

type of motivation would be most highly related to value change for Type IV subjects. While earlier stages seemed to be characterized by an orientation towards external reinforcements, Type IV individuals seemed to be characterized by an orientation towards internal reinforcements or punishments (e.g., guilt or dissonance). The internalized motivational orientation was proposed to be function of cognitive consistency, and the inconsistency between the self-concept and ego-ideal was proposed to be an important determinant of the effectiveness of inconsistency. Since Type IV is the first stage at which this source of motivation is proposed to play a central role in mediating behaviour, the correlation between ego-enhancement and value change should be greater for Type IV subjects than subjects at lower stages. If Type IV subjects change their value rankings to a significant extent only in the inconsistency with authoritative expectations conditions, the predicted positive correlation might be significant only in this condition.

Haan, Smith, and Block (1968) reported that subjects classified by the Kohlberg Moral Judgement Scale as Individually Principled (Type VI) had the smallest discrepancies between the self-concept and ideal self-concept as measured by their responses to an adjective check list. Where this discrepancy is small, the need for self-esteem should also be small, and one would expect post-conventional subjects to be less oriented towards seeking ego-enhancement. If self-esteem is an important determinant of the effectiveness of induced cognitive inconsistency, one would expect post-conventional

subjects to be less persuasible. It might also follow then that self-esteem might not be as highly correlated with value change for post-conventional subjects as for Type IV subjects. This might be due either to the possibility of low variances and resultant lack of reliability for these measures for post-conventional subjects, or because some other source of motivation has become more salient for post-conventional subjects than the need for self-esteem.

A summary of the basic predictions of this study is as follows:

- a) Type IV subjects should change their value rankings more under conditions designed to induce inconsistency between the individual's behaviour and authoritatively defined expectancies, and post-conventional subjects should change their value rankings more under conditions designed to induce the individual perception of rational inconsistency within his value system.
- b) Ego-enhancement scores will be positively correlated with value change.
- c) The correlation between ego-enhancement and value change will be greater for Type IV subjects than for Type III subjects. It was a general expectation, though not a formal proposal, that the correlation for Type IV subjects should also be greater than that for post-conventional subjects.

METHOD

Subjects

The subjects were students of introductory psychology at the University of Alberta. The introductory psychology students were administered a battery of paper and pencil tests during their regular classroom period. Participation was voluntary and more than 1/3 of the subjects did not participate. Included in this battery were the materials for this study. The eligibility of the subjects for the study was determined by their scores on the Kohlberg Moral Judgement Scale. (A more complete description of the preselection procedure is provided on page 34.) The general psychology students at the University of Alberta were required to participate in 6 hours of research as partial fulfillment of course requirements. The subjects signed up for studies in specially designed booklets at a designated location on campus. The number of subjects who participated in this study was therefore limited by the number of eligible subjects who chose to sign the booklet and to show up for the different sessions of the experiment. A total of sixty-two subjects participated.

Materials

A. Kohlberg Moral Judgement Scale

Five Kohlberg (1963) moral judgement situations were selected on the basis of their record of reliability in past research (i.e., the Percival 1968 study). The situations were administered in paper

and pencil form as presented in Appendix A. The test was scored according to the procedure specified in Kohlberg's "Global Rating Guide". (Recall that the Kohlberg scoring system carefully classified the reasons or justifications given for choice. The content of the 6 types or stages was outlined briefly in the Introduction). The content of each situation was scored separately and was assigned 3 points. If the content of the projected responses was relatively homogeneous and consistent with the type of response specified in the manual for a particular type classification, all 3 points would be awarded that type. However, if the content was mixed, 2 points were awarded to the dominant type (the type the content analysis most frequently indicated) and 1 point would be awarded the subtype (the type second most frequently indicated). The points awarded each of the six type classifications were summed across each of the five situations and the point sums were converted to percentage scores ($100 \times \text{points awarded a particular type} / \text{total points}$). Thus each subject was given a percentage responding score at each of the six type classifications.

B. Value Scale

The value scale consisted of 16 values printed separately on 16 cards. The subjects are asked to rank order the cards and then to list the values in that order in the spaces provided on a special form.

The list is an adaptation of a list of terminal values (Form D) developed by Milton Rokeach (1969). Several values (integrity, mutual

trust, social order and religion) were added to the Rokeach list because they correspond to values often projected by subjects in response to the Kohlberg Moral Judgement Scale. Several values from the Rokeach list were not used in order to keep the list at a workable length. (See Appendix B for the entire list).

C. Letter Cancellation Task

The letter cancellation task presented the subjects with a pad of 8 1/2"x 11" paper on each page of which was printed rows of capital letters. (The letter cancellation sheet is presented in Appendix C). The subject's task was to strike out (with a short slanting pencil mark) four of the five letter "A's" in each row. The score was the number of lines completed.

D. Self-Esteem Scale

The Self-Esteem Scale was developed by Janis and Field (1959). It presented the subjects a list of 23 items which they were required to endorse as either describing or not describing themselves. The authors reported that they selected the items according to their manifest content as indicating feelings of personal inadequacy. (The list of items is reproduced in Appendix D.) A split half reliability corrected by Spearman-Brown formula of .91 was reported for the items.

Procedure

Session I: The Mass Testing

The general psychology students at the University of Alberta were administered a battery of tests during their regular classroom period. The Kohlberg Moral Judgement Scale and the Value Scale were

included in the battery for the present study. The Self-Esteem Scale had been included as part of other research, but since these data were potentially of interest in this study the scores were made available.¹ On the basis of scores on the Kohlberg Moral Judgment Scale subjects were preselected to participate in the rest of the study. Only subjects classified as a dominant Type III, Type IV, or as post-conventional (Types V and VI) qualified. Subjects were given a dominant type classification only if their dominant type score was greater than 50% of the total score and twice the score of any subtype. Post-conventional types were selected on the basis of the summed percentage scores for Type V and Type VI. For most of the subjects selected these summed scores were greater than 60%.

Session II: Value Change

The subjects were assembled for the value change session in small groups (about 10 subjects each), and were seated in private booths. They were administered one of two treatments designed to manipulate change in the selected values of "equality" and "mutual trust". These values were selected by the following criterion: (a) on the average, they received a low enough rank to allow plenty of distance for change (see composite rankings, Appendix E); (b) arguments pointing to rational inconsistencies could be constructed; and (c) they were values that the experimenter did not have serious ethical reservations about changing in a positive direction.

1) I would like to thank Dr. Brenden Rule and Dr. Dave Hewitt for their co-operation in making these scores available.

Treatment A. Inconsistency with authoritative expectations.

The subjects entered the room and were seated in the private booths. A copy of the composite rankings (see Appendix E) had been placed in each booth. The experimenter was a professor at the university who introduced himself, "Hello, I'm Dr. _____." He stated the name of the experiment and made sure that all subjects were those who had signed up for the study. He then stated:

All right, just a brief word about the purpose of this study. I have been interested in studying the way in which people decide the relative importance of values. Because of certain unexpected results in the value rankings we obtained earlier this year, I am now interested in studying the reasons that people give for ranking the values as they do.

You will notice on the table in front of you a composite ranking of values for general psychology students at the University of Alberta. This sheet gives the average order in which general psychology students ranked a list of values during questionnaire research earlier this year. The higher a value is ranked on this sheet, the more important that value was seen by the average student. That is, students on the average rated inner harmony as most important, happiness second, self-respect third, and so on. You may remember having participated in this research, but that doesn't matter.

I was particularly surprised and disappointed with the low ranks given to the values of mutual trust and equality. Racial equality and equality of opportunity are values currently receiving a great deal of emphasis and are among the most important social values of our times. Of course, the establishment of relationships of mutual trust is an important objective, both for the individual and society. I would have expected these values to have received much higher ranks.

For these reasons I am going to ask you today to justify the ranks you assigned to the values of equality and mutual trust by writing out the reasons why you consider them important or unimportant.

I would now like to introduce Mr. Percival, my research assistant, who will give you specific instructions. Mr. Percival...

The subjects were required to rerank the values. They were then handed a questionnaire which asked them to justify their rankings of the values of "equality" and "mutual trust". (This questionnaire has been reproduced in Appendix F.) When they had completed the questionnaire the experimenter handed them their original value rankings which they had completed earlier in the year during the mass testing sessions. They were required to indicate on a special rating sheet (as presented in Appendix G) the extent to which they were satisfied with their original rankings of the values.

Treatment B. Rational inconsistency. As in Treatment A the subjects were seated in private booths in which a copy of the composite rankings had been placed. The experimenter did not introduce himself as Dr. _____, and made no attempt to appear as a professor or authority. The subjects' attention was drawn to the composite ranking and the purpose of the study was stated:

You will notice on the table in front of you a composite ranking of values for general psychology students at the University of Alberta. This sheet tells you the average order of importance in which general psychology students ranked a list of values during questionnaire research earlier this year. That is students on the average valued inner harmony first, happiness second, self respect third, etc. You may remember participating in this research. But it doesn't make any difference whether you do or not.

In order to more fully understand the way in which students rank values, we want to study the reasons that they give for their rankings. I am going to ask you to rank these values for us and then write out a justification for your rankings. We realize that time would not permit you to justify the rank you give

to each of sixteen values, therefore, we have selected a couple of values, namely equality and mutual trust. You will be asked to write out the reasons why you ranked each of these values as you did.

However, before you begin I would like you to read the following commentary on the composite rankings. These are some of several possible comments that could be made about the values we selected. These comments do not necessarily represent the opinion of the Experimenter, and you may or may not agree with them, but I would like you to read and consider them very carefully.

The subjects were then given a typewritten copy of the following communication:

General Psychology students at the University of Alberta did not place a great deal of value on equality. On the average they ranked equality only 10th while they ranked such personal values as happiness quite high (2nd). Equality was defined as equal opportunity, a principle which gives each individual the opportunity to obtain an equal share of that which is "good" or valued, e.g., happiness. By ranking personal values such as happiness high and the social value of equality low, University of Alberta students indicated that they don't really value happiness for all people, but rather only for themselves.

Likewise University of Alberta students did not place a great deal of value on mutual trust, yet they placed a relatively high value on friendship. This seems to be inconsistent. For mutual trust would seem to be an ideal component of an interpersonal relationship. Mutuality refers to the reciprocal nature of relationship in which each individual can be relied on to take into account the needs and perspectives of the other. By ranking friendship relatively high and mutual trust relatively low, University of Alberta students indicated that they value friendships that are not mutual, but rather one-sided or one way.

After having been given plenty of time to read the communication the subjects were required to rerank the values, write out justifications, and indicate the extent to which they were satisfied or dissatisfied with their previous rankings as in Treatment A.

Session III: Ego-Enhancement The third session of the study was arranged so that it took place, for each subject, approximately two weeks after the second session. The subjects were seated in private booths in small groups as in Session II. They were administered the value scale in order to obtain the second post-test results. They were then informed that they had completed the first study of a two study experiment. They were told that it was the experimenter's understanding that the second study would be quite different from the first and quite short in length. (The purpose of this statement was to imply that the second study was a separate study and not a continuation of the first.) The experimenter then introduced a new experimenter as Mr. _____ and left the room.

The second experimenter administered the letter cancellation task. He simply called their attention to the sample problem on the information sheet which was stapled on the front of the letter cancellation pad (See Appendix C). The subjects were instructed that their task was to strike out four of the five letter "A's" in each row, and that they were to do line number 1, then line number 2, etc., in order. They were told that the first performance session would be one minute in length and then were instructed to begin the task.

After completion of the first performance session and a brief rest of about one minute they were administered a second one minute session. Following the completion of this second session the experimenter stated the following communication:

By this time you are probably wondering what possible purpose I would have in asking you to strike out all the letter "A's" in a row of letters. This type of task is called a continuous performance task and is

an important measure of personality. It measures the extent to which you can direct stable attention to a task over a period of time. Some people just cannot stick to a task very well and their attention is unstable. People whose performances are unstable on this task are likely to be unstable, restless, and undependable in other ways.

The first two sessions were just practice sessions and your scores for those sessions don't count. Now, I'm going to ask you to perform one final five minute session. Your score on this last session will be the one you get for this task.

The subjects were then administered the letter cancellation task for five minutes.

RESULTS

Design

The basic design of this study was a 2 x 3 factorial: a factor of two levels of experimental treatments (inconsistency with authority and rational inconsistency), and an individual difference factor of three levels (Kohlberg Type III, Type IV, and post conventional subjects, respectively). The major dependent variables of interest were value change scores as (1) the change in rank for the selected values of "equality" and "mutual trust" between the pretest (session I) and the first post-test (session II) and (2) the change in rank of the selected values between the pretest and the second post-test (session III). The stability of value change during the two week interval between post-tests (second post-test scores minus first post-test scores) was also of interest. A specific interaction between the two factors was predicted; Type IV subjects were expected to get higher value change scores in the inconsistency with authoritative expectations condition, and post-conventional subjects were expected to get higher scores in the rational inconsistency condition.

Another variable of interest was ego-enhancement. Ego-enhancement scores were obtained by subtracting each subject's standard score on the practice sessions of the letter cancellation task from each subject's standard score for the post-communication five minute performance session. The score utilized for each subject for the

practice sessions was the higher score of the two practice sessions. This was taken to be an indication of the subjects ability. (Recall that subjects were not informed that the first two sessions were practice sessions until after they had completed them.) Normally the subjects' scores on the practice sessions were quite similar, however, a few subjects showed marked improvement on the second session. Hence only the larger of the two scores were utilized. The standard score difference between the practice session scores and the post-communication performance session scores were assumed to indicate, to a large extent, differences in motivation due to the communication with specific task ability controlled. The standard score differences were assumed to reflect the extent to which each subject was motivated to seek self-enhancement. In general it was predicted that those with high ego-enhancement scores would tend to have higher value change scores than those with low ego-enhancement scores.

Value Change Scores

The raw value change score data consisted of the differences between the rank of the value on the pretest and the rank of that value on either the first or second post-test. However, several sources of experimental error were confounded in these scores. On both treatments the magnitude of change for a value was limited by the initial rank of the value on the pretest, e.g., if a subject had ranked a value third the greatest change score possible was only two units, whereas if a subject had ranked a value 16 the

greatest change score possible was 15. Only subjects who had given the values "equality" and "mutual trust" a rank of three or lower were included in the study. This still left the greater part of the variability due to initial rank uncontrolled.

Not only did initial rank limit the amount of possible change, but it would also be expected to interact with the effectiveness of the treatments. In the inconsistency with authority treatment (and perhaps to some extent in the rational inconsistency treatment) the inconsistency was manipulated by setting up a discrepancy between the subjects initial rank and an advocated ideal of a high rank. The lower the initial rank, the greater was the discrepancy, and a greater amount of cognitive inconsistency would be expected to be induced.

The subjects had also been presented with a copy of the composite rankings and they were presumably aware that the other subjects had, on the average, given the values of "equality" and "mutual trust" a medium rank (ranks of 9 and 10 respectively). If their ranks were below the composite rank, the inconsistency with authority manipulation would be expected to be enhanced (for most subjects) by the knowledge that they were more discrepant than average. On the other hand if their initial rank was higher than the composite rank, they could have been comforted by the knowledge that, even though their rank fell somewhat short of the position advocated by the experimenter, they were still "better" than most subjects.

For the rational inconsistency condition, in addition to the

initial rank, the discrepancy between initial ranks of the pairs of values (i.e., "equality" and "happiness", and "mutual trust" and "friendship") that the communication attempted to define as rationally inconsistent would also be expected to be a source of error. As in the previous case, the larger the discrepancy the larger would be the expected inconsistency.

These variations in initial rank, if left uncontrolled, would tend to add a component of error to the analyses. Not only would the main effects and interactions be distorted but the error term would be enlarged to mask the power of the analyses. The raw value change scores were therefore adjusted to control for initial rank by the following procedure. The subjects were sorted into blocks based on their initial rank. These blocks were set up separately for both the first and second post-test value change scores for each value in each treatment. The range of initial rank scores used to define the boundaries of each block are presented in Appendix H. Three blocks were set up for each value in the inconsistency with authority condition. For the rational inconsistency condition, the discrepancy scores between the ranks assigned to the values of "mutual trust" and "friendship" related positively to the amount of change for the value of "mutual trust", and thus it was necessary to control for this factor as well as initial rank. The blocks were set up in a 2 x 2 factorial arrangement as indicated in Appendix H. The discrepancy scores between the ranks assigned the values of "equality" and "happiness" did not prove to be a very important source

of error for the amount of change in the value of "equality" (perhaps because this discrepancy was usually large relative to the average change score). Therefore three blocks were set up for this value as in the inconsistency with authority condition.

The unweighted mean change score across types (the mean of the means for types within that block) was taken to be the best estimate of the amount of change that would be expected of a subject in that block. Each subject's change score could then be expressed as a deviation from the expected change scores. These difference scores were thus corrected for error due to differences in initial rank between blocks. The adjusted change score could be calculated by adding a constant of the overall mean change score (the overall expected value change score) to the deviation from expected change score. The adjusted change scores for the values "equality" and "mutual trust" were summed to make a total adjusted change score. The adjusted change score means for both the first and second post-test and the stability score means are presented in Table 2.²

The Analysis of the First Post-Test Value Change Scores

Since different blocks had been utilized in the adjustment procedures, separate analyses of variance were carried out on the first post-test adjusted value change scores for each of the

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- 2) Several analyses were carried out on the raw score data which utilized other procedures to control for initial rank. For example, an analysis is reported in Appendix I which simply added an additional factor of 3 levels of blocks to the design. Several nonparametric tests which utilized matching procedures were also used to check the adjusted score findings. In each

Table 2

Adjusted Value Change Score and Stability Score Means

	First n	Post-Test $\bar{X}$	Stability Scores	Second n	Post-Test $\bar{X}$
Inconsistency with Authority					
Type III	12	6.20	-.58	12	4.07
Type IV	10	2.98	-2.29	7	.55
Post-conventional	11	.56	.60	10	.46
Rational Inconsistency					
Type III	9	3.45	.00	8	2.25
Type IV	9	2.85	.88	8	1.25
Post-conventional	11	1.59	-.29	7	2.79

inconsistency with authority and rational inconsistency conditions. Summaries of the results are presented in Tables 3 and 4.

Table 3
An Unweighted Means Analysis of Variance
on First Post-Test Adjusted Change Scores
in the Inconsistency with Authority Condition

Source	SS	df	MS	F
Types	175.75	2	87.87	10.49**
Error	251.33	30	8.38	
Total	427.08	32		

** p < .01

Table 4
An Unweighted Means Analysis of Variance
on First Post-Test Adjusted Change Scores
in the Rational Inconsistency Condition

Source	SS	df	MS	F
Types	17.34	2	8.67	.460
Error	498.15	26	18.81	
Total	506.49	28		

Highly significant differences were found between the first post-test adjusted change score means for the three levels of the

2) (cont'd) case the adjusted score analyses closely paralleled the findings of the other analyses. In order to give the reader a more parsimonious and consistent picture of the data, only the adjusted score analyses are reported.

Kohlberg type classification factor in the inconsistency with authority condition. As indicated by the means of Table 2, high positive change was obtained for Type III subjects ($\bar{X} = 6.20$), moderate positive change for Type IV subjects ($\bar{X} = 2.98$), and little change for post-conventional subjects ($\bar{X} = .56$). By the method of orthogonal comparisons, the means for both Type III and Type IV subjects were significantly greater than the mean for the post-conventional subjects ($t = 4.74$, $df = 30$, $p < .01$, $t = 1.70$, $df = 30$, $p < .05$, respectively).

No significant differences were found between the first post-test adjusted change score means in the rational inconsistency condition. Moderate positive change was found for all three levels of the Kohlberg type classification factor (although post-conventional subjects tended to change least, see Table 2).

There was little evidence of the predicted interaction between Type IV and post-conventional levels of the type classification factor and the two treatment conditions. Surprisingly there was little difference between the adjusted value change scores for Type IV subjects in the inconsistency with authority ($\bar{X} = 2.98$) and rational inconsistency ($\bar{X} = 2.85$) conditions. Recall that greater change was predicted for Type IV subjects in the inconsistency with authority condition. In general the conventional subjects (Types III and IV) changed more than expected in the rational inconsistency condition. As predicted, post-conventional subjects changed more in the rational inconsistency conditions ($\bar{X} = 1.59$) than in the inconsistency with

authority condition ($\bar{X} = .56$), but this difference did not reach significance by the method of orthogonal comparisons. An unweighted means analysis was carried out on raw value change scores across both treatment conditions. Initial rank was controlled by adding an additional factor of three blocks to the design. The predicted interaction did not reach significance (see Appendix I).

Stability of Value Change Data

Stability scores were calculated by summing the differences between the first and second post-test ranks (second post-test minus first post-test ranks) for the values of "equality" and "mutual trust". These raw scores were not adjusted for initial rank as the magnitude of change was small, on the average, compared to the magnitude of possible change. These stability scores were particularly interesting because they indicated the effectiveness of the two treatment conditions in maintaining value change over the two week interval.

The mean stability scores are presented in Table 5. A summary of the results of the 2 x 3 (treatments x types) design is presented in Table 6. None of the main effects or interactions were significant.

Table 5
Mean Stability Scores

Inconsistency with Authority						Rational Inconsistency					
Type III n	$\bar{X}$	Type IV n	$\bar{X}$	PC n	$\bar{X}$	Type III n	$\bar{X}$	Type IV n	$\bar{X}$	PC n	$\bar{X}$
12	-.58	7	-2.29	10	.60	8	.00	8	.88	7	-.29

Table 6
Unweighted Means Analysis of Stability Scores

Source	df	SS	MS	F
A (treatments)	1	11.36	11.36	1.40
B (types)	2	6.21	3.11	.38
AB	2	35.01	17.51	2.17
Error	46	371.05	8.07	
Total	51	423.63		

The interpretation of stability score results must take into account the first post-test change scores. Thus conventional subjects in the inconsistency with authority condition demonstrated a strong tendency toward positive change in the first post-test but these scores tended to drop off somewhat during the two weeks prior to the second post-test. In contrast, the change scores for conventional subjects in the rational inconsistency condition tended to hold up well or even increase slightly in the rational inconsistency condition. An orthogonal comparison of the mean stability scores for conventional subjects found a significant difference between the two treatments ($t = 1.92$, $df = 46$, $p < .05$). The effect was, of course, carried primarily by Type IV subjects who showed the largest mean differences, and would not have reached significance had only Type III subjects been used.

The Analysis of Second Post-Test Value Change Scores

The second post-test raw value change scores were adjusted for the influence of initial rank by a procedure similar to that utilized for the first post-test data. (The only difference was that the expected value of change within a block was calculated by simply taking the mean of all subjects within a block, instead of utilizing an unweighted mean balanced for types. Subject depletions made the latter procedure unfeasible. See Appendix H). The adjusted value change score means are presented in Table 7.

Table 7
Second Post-Test Adjusted Value Change Score Means

	n	$\bar{X}$
Inconsistency with Authority		
Type III	12	4.07
Type IV	7	.55
Post-conventional	10	.46
Rational Inconsistency		
Type III	8	2.25
Type IV	8	1.25
Post-conventional	7	2.79

Normally one would expect that the sum of the first post-test means and the stability score means would equal the second post-test means. A comparison of Tables 7 and 8 indicates this was not the

case. The discrepancies were due to the subject depletions.³ One could not, of course, predict how these depleted subjects would have behaved had they completed the study. But as the means of Table 9 indicate, the subjects who failed to complete the study tended to have higher first post-test change scores, on the average, than did the remaining subjects. This is especially true in certain cells of the design; for example, in those cells defined by Type III and IV in the rational inconsistency condition, there is a noticeable difference between the means of Table 7 and Table 8.

Table 8

The Sum of the First Post-Test Unweighted Value Change
Score Means and Stability Score Means

	First Post-test		Stability		Sum
	n	$\bar{X}$	n	$\bar{X}$	
Inconsistency with Authority					
Type III	12	6.20	12	-.58	5.62
Type IV	10	2.98	7	-2.29	.69
Post-conventional	11	.56	10	.60	1.16
Rational Inconsistency					
Type III	9	3.45	8	.00	3.45
Type IV	9	2.85	8	.88	3.73
Post-conventional	11	1.59	7	-.29	1.30

3) Notice that no subject depletions occurred for Type III subjects in the inconsistency with authority condition. Nevertheless there is a discrepancy between the scores of Table 7 and 8. This discrepancy illustrates that the subject depletions resulted in changes in the expected values for the adjustment procedure. The means within blocks would be altered as well as the overall mean. This would have a small effect on the adjustment for all subjects.

Table 9
First Post-Test Value Change Score
Means for Subject Depletions

	n	$\bar{X}$
Inconsistency with Authority		
Type III	0	-
Type IV	3	3.00
Post-conventional	1	2.00
Rational Inconsistency		
Type III	1	10.00
Type IV	1	22.00
Post-conventional	4	1.75

While one might reason that the data of Table 8 present a more representative picture of the findings of the study, the analyses of the second post-test results must utilize adjusted value change scores of Table 7. However, to be conservative, one ought to rely on effects that appear between the means of both Tables 7 and 8.

Perhaps the most noticeable effect is the relatively high mean value change scores for Type III subjects in the inconsistency with authority condition. Recall that the analysis of first post test data found significant differences for this condition, but not for the rational inconsistency condition. The stability score analysis indicated a strong tendency for the scores of Type IV subjects in the inconsistency with authority condition to drop off

during the two week interval, while Type III and post-conventional scores did not change radically. However, of this latter pair, only Type III subjects had high value change scores on the first post-test. On the basis of these findings, one would therefore expect a statistically significant comparison of the second post test value change score means of Type III subjects with Type IV and post-conventional subjects. Table 10 presents a summary of the results of an unweighted means analysis of variance on the second post-test adjusted change scores in the inconsistency with authority condition. A comparison of the mean of Type III subjects with those of Type IV and post-conventional subjects was significant ($t = 2.27, df = 26, p < .025$).

Table 10

An Unweighted Means Analysis of Variance on Second Post-Test Adjusted Change Scores in the Inconsistency with Authority Condition

Source	SS	df	MS	F
Types	76.52	2	38.26	2.22
Error	447.20	26	17.20	
Total	523.72	28		

On the basis of the first post-test and stability score results one would not have expected significant differences in the second post-test results for the rational inconsistency condition. However, subject depletions make interpretation of these results difficult..

For example, if we compare the means of Table 7 with those of Table 8, we find that in the rational inconsistency condition, Type IV subjects have the smallest and largest means respectively. Obviously the one subject depletion was particularly damaging to the interpretation of the results for this cell of the design. Perhaps the best that can be said of these results is that the subjects' scores evidenced a moderate tendency toward positive change with little consistent evidence of differential change between levels of the type classification factor (from Table 7, Type III = 2.25, Type IV = 1.25, and Post-conventional = 2.79). An unweighted means analysis of variance of adjusted value change scores for the rational inconsistency condition failed to find differences. A summary of these results is presented in Table 11.

Table 11

An Unweighted Means Analysis of Variance on Second Post-Test Adjusted Change Scores in the Rational Inconsistency Condition

Source	SS	df	MS	F
Types	9.42	2	4.71	.21
Error	456.95	20	22.85	
Total	466.37			

The Relationship between Ego-Enhancement
and Value Change

The rank difference correlations (Peatman, 1963) between the adjusted value change scores and ego-enhancement are presented in

Table 12. The correlation between ego-enhancement and first post-test change scores roughly parallel the correlations between ego-enhancement and second post-test change scores. A positive relationship between the two variables was predicted. There is little

Table 12
Rank Difference Correlations between
Adjusted Value Change Scores and Ego-Enhancement

	First Post-Test		Second Post-Test	
	n	rho	n	rho
Inconsistency with Authority				
Type III	12	-.28	12	-.20
Type IV	7	-.61	7	-.25
Post-conventional	10	-.15	10	-.21
Pooled <u>Ss</u>	29	.02	29	.05
Rational Inconsistency				
Type III	8	.29	8	-.50
Type IV	8	.79*	8	.83*
Post-conventional	7	-.38	7	-.08
Pooled <u>Ss</u>	23	.07	23	.27

*p < .02

evidence of this across the pooled subject sample in either treatment condition for either the first post-test or second post-test results. However, it was expected that the relationship would be the greatest for Type IV subjects. Significant positive relation-

ships between both first and second post-test value change scores and ego-enhancement were found for Type IV subjects in the rational inconsistency condition, but not in the inconsistency with authority condition. Contrary to expectation, the correlation for Type IV subjects tended to be negative in the inconsistency with authority condition.

The Relationship between Stability Scores and Ego-Enhancement

Both analysis of variance and correlational analyses were utilized to investigate the relationship between ego-enhancement and stability scores. In order to incorporate ego-enhancement into the design of the analysis of variance, a factor of two levels was added: high ego-enhancement (scores $> .10$) and low ego-enhancement (scores $< .10$). Borderline subjects were not used. The means are presented in Table 13. An unusually large number of borderline post-conventional subjects in the rational inconsistency condition made it necessary to limit the analysis of variance to conventional subjects only. The results are presented in Table 14.

The ego-enhancement main effect did not reach significance. Instead ego-enhancement interacted significantly with the treatment factor. The interaction is illustrated in Figure 1. The effect appears primarily due to a strong tendency towards instability of value change on the part of low ego-enhancement conventional subjects in the inconsistency with authority condition. Further evidence for this interpretation comes from the correlational data.

Table 13
Mean Stability Scores

	n	$\bar{X}$
Inconsistency with Authority Conditions		
Type III		
High Ego-enhancement	7	.72
Low Ego-enhancement	5	-2.40
Type IV		
High Ego-enhancement	3	-1.33
Low Ego-enhancement	3	-3.67
Post-conventional		
High Ego-enhancement	3	-1.67
Low Ego-enhancement	4	1.57
Rational Inconsistency Condition		
Type III		
High Ego-enhancement	3	-1.00
Low Ego-enhancement	4	+1.00
Type IV		
High Ego-enhancement	3	1.33
Low Ego-enhancement	5	.60
Post-conventional		
High Ego-enhancement	2	2.00
Borderline	3	-2.00
Low Ego-enhancement	2	.00

High positive and significant rank difference correlations were found between ego-enhancement and stability of value change for Type III ($r = .86$, $n = 12$, $p < .02$) and Type IV ($r = .77$, $n = 7$, $p < .05$) subjects in the inconsistency with authority condition. These corre-

Table 14

An Unweighted Means Analysis of Stability Scores
for Conventional Subjects in Both Treatments

Source	DF	SS	MS	F
A Treatments	1	22.42	22.42	4.38*
B Conventional Types	1	4.51	4.51	.88
AB	1	22.80	22.80	4.45*
C Ego-enhancement	1	16.35	16.35	3.19
AC	1	33.41	33.41	6.52*
BC	1	.03	.03	.01
ABC	1	12.86	12.86	2.51
Error	25	128.11	5.12	
Total	32	240.49		

* $p < .05$

lations did not reach significance in the rational inconsistency condition (Type III, $r = -.34$, and Type IV, $r = .52$).

At the post-conventional level, the relationship between ego-enhancement and stability of value change was unclear. In the inconsistency with authority condition the relationship appeared to be negative, but was insignificant (high ego-enhancement = -1.67 , low ego-enhancement = 1.57 , rank-difference correlation = $-.40$). In the rational inconsistency condition, a larger number of borderline ego-enhancement subjects made the relationship difficult to test. The direction of the relationship appears to be "U" shaped (high ego-enhancement = 2.00 , borderline = $-.200$, low ego-enhancement = $.00$). It is of course difficult to ascertain whether these

FIGURE I

Mean Stability Scores for the Ego-Enhancement
and Treatment Interaction (conventional subjects only)

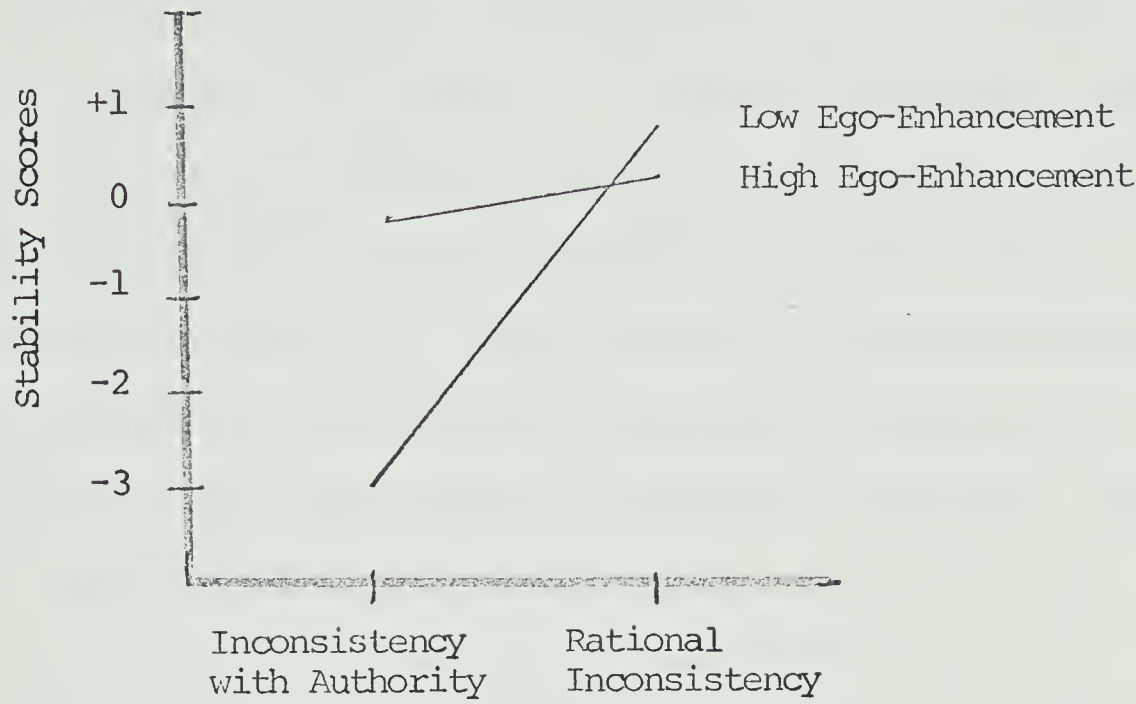
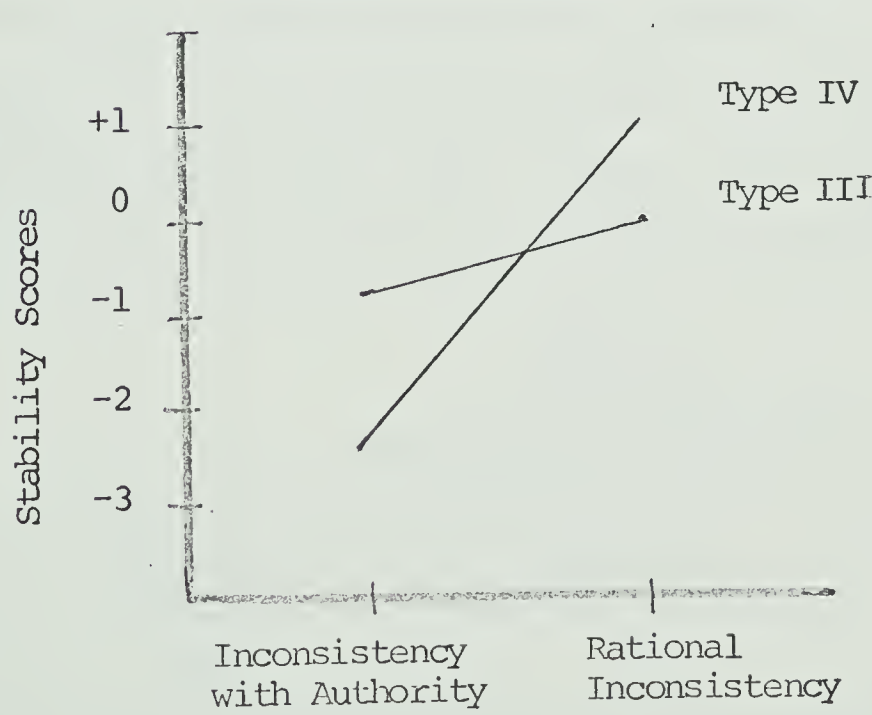


FIGURE 2

Mean Stability Scores for the
Types and Treatment Interaction



relationships would have been significant had a larger sample of post-conventional subjects been available.

Two significant effects of Table 14 supported previously reported findings in the analysis of stability scores (see page 49). The main effect for treatments supported the previously reported finding that change scores for conventional subjects tended to decrease (mean stability = -1.67) in the inconsistency with authority condition and showed a slight tendency to increase (mean stability = .48) in the rational inconsistency condition. That this difference may have largely been due to Type IV subjects was indicated by the significant types x treatments interaction. The interaction is illustrated in Figure 2. The difference between treatments was greater for Type IV subjects than for Type III subjects.

Ego-Enhancement and Self-Esteem

The mean ego-enhancement scores for the three Kohlberg type classification groups are presented in Table 15. The relationship tended to be in the predicted direction with Type IV subjects having the highest mean score. However, the effect is not significant by the unweighted means analysis of variance.

Table 15

Mean Ego-Enhancement Scores

Type III	Type IV	Post Conventional
-.03	.10	-.01

The distribution of self-esteem scores tended to be bimodal. In order to avoid the possible effects of non-normality, the medians test was utilized to test for differences between the Kohlberg groups. The median self-esteem scores for these groups are given in Table 16. Type IV subjects had a higher median self-esteem score (high scores indicate high self-esteem) than either Type III or post-conventional subjects. The medians test for differences between the Type IV group and combined Type III and post-conventional groups was significant ($\chi^2 = 5.40$, $df = 1$, $p < .025$).

Table 16
Median Self-Esteem Scores

Type III	Type IV	Post Conventional
66.0	72.0	66.5

Self-esteem was positively related to ego-enhancement for conventional subjects as evidenced by the significant Phi coefficient of .35 (where $n = 31$, $\chi^2 = 3.8$, $df = 1$, $p < .05$). This relationship did not hold for post-conventional subjects ($\Phi = .025$).

Additional Data

Several sources of data were available as by-products of the study. These were analyzed for exploratory purposes: (a) in order to muster additional information which might be helpful in interpreting the results of the present study, and (b) in order to gain

insights into possibilities for future research.

The Value Scale

One source of data was of course the rank-ordering of the sixteen values. Because of the present proposals emphasis on self-esteem and cognitive consistency, the results for the values of "self-respect" (self-esteem) and "inner harmony" (freedom from inner conflict) are particularly interesting. The ranks that Type III, Type IV, and post-conventional subjects assigned to these values were compared using the medians test. The results for inner harmony did not reach significance. The deviation from expected frequency scores for the value of self-respect are presented in Table 16. A tendency towards sex differences within the Type IV group made it necessary to partition it. As indicated, Type IV males and post-conventional subjects tended to assign the highest ranks to self-respect ($\chi^2 = 9.05$, $df = 3$, $p < .05$).

Table 17

Deviations from the Expected Frequency
Scores for the Value of "Self-Respect"*

Type III	Type IV Males	Type IV Females	Post Conventional
-3.0	4.0	-5.0	4.0

* The deviations from the expected frequency scores are presented only for cells above the median so that positive scores indicate a tendency towards assigning higher ranks.

"Self-respect" correlated positively with "inner harmony" for conventional subjects ($\Phi = .21$, where $n = 91$, Chi-square 4.02, $df = 1$, $p < .05$) but not for post-conventional subjects ($\Phi = .00$).

No significant relationships were found between the ranking of "self-respect" and the self-esteem or ego-enhancement scores.

As would be expected Type IV subjects placed a higher value on "religion" (Chi-square = 4.40, $df = 1$, $p < .05$) and the "social order" (Chi-square = 7.94, $df = 1$, $p < .005$) and a lower value on "peace" (Chi-square = 4.78, $df = 1$, $p < .05$) than did other subjects. Type III's placed a higher value on the "comfortable life" (Chi-square = 5.24, $df = 1$, $p < .025$) than others and Type IV males and post-conventional males valued "freedom" (Chi-square = 4.25, $df = 1$, $p < .05$) more than other subjects. No significant differences were found for "equality" and "mutual trust".

The Justification Data

A second source of data is the justification that subjects were required to write out just following the first post-test ranking of the values (see Appendix F). The justifications most frequently could be fitted into one of four categories which are described below:

- A. Justification according to need, e.g., "Don't need _____ as much as other values", "I've never had to worry much about _____", or "I can be happy without _____".
- B. Justification according to belief about the realistic existence or nonexistence of the value, e.g., "Shouldn't be concerned because _____ already exists", or "_____ doesn't exist, it's impossible or unrealistic."

- C. Justification according to a simply stated belief or opinion about the relative importance or unimportance of a value (categoricalness), "_____ is important (or unimportant), other values more important."
- D. Justification according to a value's logical implication for other values (centrality), e.g., "If have _____ then other values follow", "_____ is more inclusive and therefore implies other values", "need to have _____ before you can have other values."

These categories should probably not be taken as any type of refined scoring system, but rather as representing the overall impressions of the present writer. Nevertheless, this type of analysis did produce some interesting suggestions. The protocols were scored by assigning one point to the most prevalent type of justification utilized. (In cases where different types of justification were utilized for each of the two values one-half point was assigned to the most prevalent mode for each value). The percentage of justification utilized by each Kohlberg group is presented in Table 17. Most noticeable was the high frequency of usage of logical implications as a mode of justification. This suggests a possible organizational dimension for value systems.

Noticeable also is the tendency for frequent use of logical implication by Type III and post-conventional subjects in contrast to the tendency among Type IV's for simple statements of belief. Type III's implicative statements tended to be most typically of the form, "If you have values _____, _____, and _____,

Table 18

Percentage Usage of Different Types
of Justifications for Value Rankings

Type of Justification	Type III	Type IV	Post Conventional
A. Need	14%	10%	5%
B. Existence	7%	20%	15%
C. Belief	29%	44%	30%
D. Logical Implications	45%	26%	50%

values _____, _____, and _____ just 'naturally' follow". Post conventional subjects, on the other hand, tended to specifically emphasize the personal values of "self-respect", "integrity", and "inner harmony" as being necessary for the individual to achieve or accept the other values.

The Ratings of Self-Dissatisfaction

Recall that following the first post-test value ranking the subjects were asked to write out justifications defending these rankings. They were then given their previous value rankings and asked to rate the extent to which they were satisfied or dissatisfied with them. It was expected that subjects with large discrepancies between the two rankings of a particular value would experience dissatisfaction with the previous ranking of that value. This was the case; subjects with little discrepancy (+ 2 or less) reported that they were satisfied with their previous ranking, while subjects with larger discrepancies (+ 3 or greater) reported dissatisfaction. Tetrachoric correlations were computed using a 2 x 2

matrix of small vs. large raw change scores (as indicated above) and reported satisfaction--dissatisfaction. These correlations are quite large for both values across all subjects in both treatments: "equality" = .78 and "mutual trust" = .95.

DISCUSSION

The major hypothesis of this study predicted an interaction between Type IV and post-conventional subjects and the two treatments, inconsistency with authoritative expectations and rational inconsistency. Since the value system for Type IV subjects seems to be defined in terms of authority and the social order, it was predicted that they should change more when inconsistency was defined in terms of authoritative expectations. Post-conventional subjects who supposedly operate in terms of self-accepted values (rather than externally defined values) should change little under these conditions. On the other hand when the inconsistency is internal in terms of the perception of rational inconsistency within one's own value system, post-conventional subjects would be expected to change.

The predicted interaction did not directly receive much support (see Table 2). The analysis of the first post-test value change scores found significant differences between the scores of conventional and post-conventional subjects in the inconsistency with authority condition. Post-conventional subjects, on the average, changed their value rankings very little in this condition. In contrast there were no significant differences between the Kohlberg groups in the rational inconsistency condition. The first post-test means for the Type IV subjects in both conditions are quite similar ($\bar{X} = 2.98$ and 2.85 respectively). The means for post-conventional subjects were in the predicted direction as evidenced

by a tendency toward greater change in the rational inconsistency condition ($\bar{X} = 2.79$ as compared to 1.59). However this difference was not significant.

The finding that conventional subjects would be influenced by the inconsistency with authority manipulation was not a great surprise and would in fact, have been suggested by the Percival (1968) study. However, the effectiveness of the rational inconsistency condition in effecting value change for the conventional subjects was not expected. Even though special efforts were made to avert the possibility of the subject perceiving the rational communication as necessarily representing the Experimenter's opinion, it is possible that subjects might have ignored the instructions and might have been influenced by their perception of Experimenter expectations. The subjects might have perceived the communication as coming from some authority other than the Experimenter. Subjects may also have reacted to the derogatory rather than the rational content of the communication. Nevertheless, the interpretation with the most plausibility is perhaps that the subjects were largely influenced by the rational arguments.

A second post-test followed the first by an interval of two weeks. Perhaps the most effective way to summarize the change in value rankings over the two week period is to review the results for each level of the type classification factor separately (see Table 2). Type III subjects tended to have high positive change scores in the first post-test in both conditions and these scores

held up well over the two week interval. In the inconsistency with authority condition, the Type III subjects had significantly higher change scores on the second post-test than did the other two groups. Type IV subjects tended to have moderate positive change on the first post-test in both conditions, however, the scores dropped off sharply in the second post-test in the inconsistency with authority condition, and, in contrast increased slightly in the rational inconsistency condition. Hence, contrary to prediction, there was a slight tendency toward greater second post-test value change for Type IV subjects in the rational inconsistency condition ($\bar{X} = 1.25$) than in the inconsistency with authority condition ($\bar{X} = .55$). As predicted, post-conventional subjects tended to change more in the rational inconsistency condition on both the first ($\bar{X} = 1.59$ vs. $.56$) and second ($\bar{X} = 2.79$ vs. $.46$) post-test analyses. The effect was clearly not significant in the first post-test (see Appendix I). The effect appears to be somewhat enhanced on the second post-test; however, since the stability scores showed no tendency for post-conventional subjects to increase their value change scores over the 2 week interval, the apparent enhancement was probably due to differences in adjustment procedure due to subject depletions.

The second post-test was included as an attempt to assess the stability of the value change over time. Value change on the first post-test might simply have been a function of a tendency to comply in the immediate persuasive situation. Behaviour that persists in

the absence of external control could be said to be internalized. Unfortunately it is unclear in the present study whether the second post-test rankings are an indication of internalization. Both the first and second post-test rankings were obtained in the same setting. Cues associated with the first post-test setting could have been reinstated in the second, and the behaviour in both could be said to be a function of assumed experimenter expectations. A better indication of internalization would have been to obtain value rankings in a totally independent setting; this methodology however was beyond the scope of practicality for this study.

As mentioned previously, this writer is quite uncertain as to what extent Type III values are internalized. Type III's characteristically classify acts as "good" or "bad" based on their approval value. The question is whether contingent overt social approval is necessary, or whether the knowledge that an act would be approved or disapproved is sufficient. The performance of the Type III subjects in the present study would seem to indicate the latter. Type III subjects ranked the values at nearly the same mean level in the first and second post-test in both conditions. Apparently a situation which reinstates cues and would lead to the expectancy that high ranks would be approved by authority was quite successful as indicated by the high mean rank on the second post-test in the inconsistency with authority condition. Whether this might legitimately be termed internalization is another matter. For example, one might

predict that another manipulation in which an authority would define the same values as negative might produce a reversal in the value rankings.

While one might attempt to dismiss second post-test value change in the inconsistency with authority condition as compliance with previous externally defined expectations, one cannot so easily dismiss the findings of the persistence of value change for Type III subjects in the rational inconsistency condition. Although alternate interpretations are possible, one must, at least, entertain the notion that the perception of rational inconsistency was more effective in producing value change for Type III subjects than was anticipated.

As previously mentioned, Type IV subjects changed their value rankings moderately on the first post-test in both conditions. However, there was a strong tendency for this change not to persist in the inconsistency with authority condition. In contrast, in the rational condition, the change scores held up well showing a slight tendency to increase.

It was noted in the Introduction that Type IV values seem to be defined by authority and the social order, and it was therefore predicted that Type IV subjects would evidence a strong tendency toward value change when their value rankings were inconsistent with authoritative expectations. The present findings suggest, as did the Percival (1968) study, that Type IV subjects were willing to comply to authoritative expectations, but contrary to expectation

the present findings suggest that this did not necessarily lead to internalization. Further complexities of interpretation were suggested by the relative effectiveness of the rational inconsistency condition for Type IV subjects.

The inconsistency with authority manipulation was not very subtle, and the presentation of their previous rankings for comparison at the termination of the session may have made the subjects aware that they had been manipulated. In de Charm's (1968) terminology they may have felt like pawns. They may have been able to justify their behaviour in terms of having no choice; compliance to the demands of authority may have been reason enough for the first post-test rankings. One is reminded of the example of a child who, forced to go to church by his parents, goes through the motions of the ritual under conditions that would be thought to enhance behavioural commitment, yet doesn't perceive the relevance of these behaviours for himself since he didn't choose to participate in the first place. Likewise the subjects' perception of having been tricked or manipulated in the first place, may have denied self-relevance to all behaviours in the session including the written justifications.

The small child of the previous example was not threatened by his "pawtness", because "pawtness" is normative or even a desirable (obedience) part of his role as a child. Likewise Type IV subjects apparently perceive compliance to authority as desirable or ideal and their lower value rankings in second post-test may have simply

reflected the lack of external control. On the other hand, the perception of having been manipulated may have been a painful awareness on the part of the subjects. In terms of Brehm's (1966) theory of psychological reactance, it may have been perceived as a threat to the subject's psychological freedom. The subject may have attempted to regain his psychological freedom by responding on the second post-test more consistently with his pre-test rankings.

In contrast, the rational inconsistency condition gave the subjects greater freedom of choice, i.e., they were simply told to read and evaluate the communication and then to rank order the values. The written justifications, under these conditions, would be expected to enhance behavioural commitment to the new value rankings. The perception of inconsistency between the previous rankings and the new rankings should have enhanced the inconsistency effect.

The psychological reactance interpretation seems plausible (and in fact these results should have been expected in terms of the point of view presented in the introductory chapter). However, the question remains as to why the Type IV subjects should have been particularly subject to psychological reactance in contrast to the Type III and post-conventional subjects in the inconsistency with authority condition. In general one would expect Type III subjects, who presumably are strongly oriented toward social approval and external control, to comply with the demands of others and not to

be concerned with psychological freedom. However, it was proposed that self-esteem plays a central role in motivating Type IV behaviour, and that psychological reactance could function to maintain self-esteem by maintaining current perspectives of the self and the self's values. Thus, perhaps a more parsimonious explanation is simply that the perception of a compliant or manipulated self is not conducive to self-esteem. The correlation between ego-enhancement and value change for Type IV subjects in the inconsistency with authority condition tended to be negative (see Table 12) though not significant. Perhaps those with high ego-enhancement scores tended to view compliance with authority as threatening to their self-esteem; there can only be interesting speculation on this point. It is also interesting to note that of the four subject depletions in this condition, three were Type IV subjects. A psychological reactance interpretation might be appropriate for these subjects as well.

Little negative change between post-tests due to psychological reactance would be expected for post-conventional subjects since, on the average, they did not exhibit a strong tendency to comply with authority in the first place. The direction of the relationship between ego-enhancement and value change on both post-tests in the inconsistency with authority condition was negative for post-conventional subjects, however, the size of this relationship was too small and insignificant to give much credibility.

The second major prediction of the study was that value change

would be positively related to ego-enhancement. Across the entire subject pool this was not the case in either condition of the study. However, it was also expected that this should be primarily true for Type IV subjects. A high positive correlation between value change and ego-enhancement was found for Type IV subjects in the rational inconsistency condition; however, the direction of the relationship in the inconsistency with authority condition was negative and the magnitude of the correlation was not significant. The high positive relationship in the rational inconsistency condition is, of course, consistent with predictions. The magnitude of the correlation is impressive (rank difference $r = .79$ and $.83$) and reached a high level of significance ($p < .02$) despite the fact that there were only 8 subjects in the sample. The magnitude of the correlation is actually too large to be believable since it is in the range that would be considered a good reliability for either of these measures. Given the size of the sample, the magnitude of the correlation could have been inflated by chance variation. Nevertheless, given the present findings, it would be reasonable to expect a positive significant correlation (perhaps of a lesser magnitude) from a larger sample.

No significant rank difference correlations between value change and ego-enhancement were found for Type III or post-conventional subjects. None were expected for Type III subjects. However, if self-esteem is an important moderator variable for cognitive consistency motivation for Type IV subjects, why would it not continue to be so

for post-conventional subjects? The relationship between ego-enhancement and value change for post-conventional subjects in the rational inconsistency condition was masked by a large number of borderline ego-enhancement subjects and a tendency towards curvilinearity. There was a tendency towards high positive change on the part of both high (2 subjects) and low (2 subjects) ego-enhancement subjects, while the 3 borderline subjects evidenced little or negative change on both post-tests. Of course with such a small subject sample this curvilinear effect was not readily testable.

Further support for a relationship between ego-enhancement and value change comes from the analysis of stability scores. Ego-enhancement interacted significantly with the treatments in the analysis of stability scores for conventional subjects (see Figure 1). Greater differences between treatments was found for low ego-enhancement subjects than high ego-enhancement subjects. High ego-enhancement subjects on the average exhibited much greater stability in the inconsistency with authority condition than did low ego-enhancement subjects, while the differences do not appear great in the rational inconsistency condition. This finding is thus primarily due to the instability of value change for low ego-enhancement subjects in the inconsistency with authority condition. One must keep in mind when interpreting stability scores that they are directly a function of both first and second post-test scores. Since ego-enhancement tended to correlate negatively with value change on the first post-test, subjects low on ego-enhancement would have more positive scores and

thus would have received greater negative stability scores had their ranks on the second post-test simply returned to approach the level of their pre-test ranks.

A primary focus of the present study was on the internalization of moral standards or values. It was noted that Type IV subjects seemed to be a paradox: on one hand they appeared to define values in terms of the external demands of authority and the social order, and, on the other hand, they tended to project internalized feelings of compulsion, duty, and guilt in relation to such standards. It was hypothesized that authority and the social order would define the Type IV's system of values and that the discrepancy between these values and the self-concept would provide a source of internalized motivation. The findings of the present study suggest further complications. How does one account for the fact that a strong tendency to comply to the expectations of authority apparently did not produce much lasting change in the advocated values?

One interpretation of these results is suggested by the content of the Type IV's responses to moral dilemma situations. While the Type IV responses are characterized by an adherence to authority and the social order, they are stated categorically with an orientation that is reminiscent of the ethical philosophy of moral realism. The moral realist believes that moral standards or values have an existence that is independent of his own cognitions, perceptions, beliefs, etc. These standards or values are therefore not dependent

for their existence on self-acceptance, for they would be just as "true" or "right" if the individual rejected them. The Type IV subjects may tend to quote what they believe to be morally "right" or "wrong" when answering the "should questions" of the moral dilemma situations, without having strongly internalized such standards. One is reminded of the findings of the now classic study by Hartshorne & May (1928 - 1930) that knowledge of conventional moral rules does not necessarily predict moral conduct as resistance to temptation behaviour.

It was suggested that a consistent tendency to comply to the dictates of authority should, in the long run, lead to the acceptance of the authority and social order morality. This may be the case, but the extent to which the content of this moral orientation is internalized may depend on other variables. Internalization for Type IV subjects may not stem simply from compliance to authoritative control, but may also be dependent on the variables suggested in the previous discussion of the effectiveness of the rational inconsistency condition, i.e., behavioural commitment to a position in which the individual perceives that he had freedom of choice may lead to self-acceptance and internalization. One can only guess that the authoritative manipulation might have been more effective had the Experimenter utilized a procedure which would minimize the effects of psychological reactance and which would allow the subjects at least some illusion of freedom of choice.

Other findings which did not directly relate to the basic pre-

dictions of the study were also interesting. An analysis of self-enhancement scores found no significant differences between the three Kohlberg groups, however, the relationship was in the expected direction with Type IV subjects having the highest mean scores. This illustrates a surprising finding of the study. Self-esteem was positively correlated with ego-enhancement for conventional subjects. This was of course contrary to expectation. However, this expectation was based on the assumption that the Self-Esteem Scale would relate to self-esteem defined from the theoretical framework presented in the introduction. Low self-esteem was defined as a chronic discrepancy between an individual's self-concept and the ego-ideal. This discrepancy was thought to be a source of tension within the cognitive system of the individual and as a result to cause a strong tendency to seek self-enhancement. In order to get a low self-esteem score, the subjects had to endorse items with self-critical or negative content (see Appendix D). Yet subjects who have low self-esteem in terms of the conceptualization above should be the ones most likely to be inclined to "fake good". Perhaps the same tendency to seek self-enhancement on the manipulated measure of ego-enhancement also prevailed as a tendency to present a positive image of the self on the Self-Esteem Scale. Recall that this effect held only for conventional subjects; perhaps self-esteem for conventional subjects is more a function of how others (i.e., the Experimenter) evaluate them than for post-conventional subjects. Post-conventional subjects should be less inclined to "fake good" as a defensive reaction since their

evaluations of themselves should be more a function of self-accepted standards than the opinions of others.

Thus the self-esteem scores relate to ego-enhancement for conventional subjects only. Likewise ego-enhancement was related to value change consistently only for Type IV subjects in the rational inconsistency condition. Ego-enhancement was related to stability scores only for conventional subjects. Adding to this pattern of results was the finding that the rank assigned to the value of "self-respect" correlated positively with the rank assigned to the value "inner harmony" only for conventional subjects. Yet post-conventional subjects placed a relatively high value on "self-respect". They ranked "self-respect" first, closely followed by the value "integrity". This writer was impressed by the extent to which post-conventional subjects used implicational logic to defend the rank assigned to values. They often emphasized the central position of the personal values of "self-respect" , "inner harmony", and "integrity". (This latter data may reflect a bias on the part of the present writer who would have oriented toward finding precisely these effects in the protocols for these subjects.)

Of the findings reviewed in the preceding paragraph, no one relationship would be very conclusive. However, taken as a pattern they illustrate one important principle. The relationship between variables may vary greatly as a function of the sample. Psychologists often assume organizational processes common to all people, as would be implied by the question, "What are the determinants of

cognitive consistency?" They might better ask what determines cognitive consistency for a particular sample of people who have similar scores on individual difference variables. Thus while self-esteem would appear to be an important determinant of cognitive consistency for some people, it does not appear to function equally effectively for all. It has been proposed that motives may be important sources of organization within cognitive systems and that the salience of a particular motive may vary as a function of development. Future research aimed at discovering differential organizational properties of cognitive systems at different levels of development might prove productive.

Of course the most important finding of this study was the continuation of empirical support for the relationship between cognitive and motivational development proposed by this writer (Percival 1968). Again an interaction between cognitive developmental types and motivational variables and conditions was in evidence. There is good reason to expect that the continuation of research aimed at the discovery of the parallels between the evolution of cognitive and motivational systems would be productive. The significance of the ego-enhancement factor for Type IV subjects places the salience of this source of motivation at the predicted point in the sequence.

Thus further research into the relationships between cognitive and motivational development would seem warranted. Continuing success in such an endeavour could begin to draw together such diverse approaches as the psychological growth schools of Rogers and Maslow, the neo-

Freudian school of ego psychology, and the cognitive developmental approach of Piaget. Maslow's (1954) motivational hierarchy is markedly similar to the one proposed by the present writer even though they developed from different approaches. The emphasis of ego psychology on ego functions, ego ideal, mechanisms of defense, etc., would be consistent with the present study's emphasis on values and self-esteem. Lastly, of course, the Kohlberg approach, to which the above approaches may be related, is an outgrowth of the Piaget tradition of cognitive development. In the present writer's opinion the empirical derivation of a more general theoretical approach to personality is not an unreasonable goal.

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APPENDIX A

Kohlberg Moral Judgement Scale

DECISION STORIES AND QUESTIONS

On the following pages you will find several stories each of which are followed by some questions. The purpose of these stories and questions is to get at your opinions and ideas. Please write down all the ideas or feelings they bring to mind rather than giving "Yes" or "No" answers. Just writing "Yes" or "No" is definitely not an adequate answer. You should always give your reasons for your answer.

You are to write your answers in the spaces provided following each question. If you need more space you may write on the back of the page, but if you do make sure you specify which question you are answering. You should be able to answer most of the questions in the space that is provided.

Remember that this is not a test in the usual sense. There are no right or wrong answers. There can only be different ideas and opinions about these stories. So, do not spend a long time thinking about how to answer any one question, but simply write down what your opinions and ideas are about it.

* * * * *

In Europe a woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost him to make. He paid \$200 for the radium and charged \$2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about \$1,000 which is half of what it cost. He told the druggist that his wife was dying and asked him to sell it cheaper or let him pay later. But the druggist said "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and broke into the man's store to steal the drug for his wife.

Should Heinz have done that? Was it actually wrong or right? Why?

Is it a husband's duty to steal the drug for his wife if he can get it no other way? Would a good husband do it?

Did the druggist have the right to charge that much when there was no law actually setting a limit to the price? Why?

Answer the next question only if you think he should steal the drug. If the husband does not feel very close or affectionate to his wife, should he still steal the drug? Why?

The drug didn't work, and there was no other treatment known to medicine which could save Heinz's wife, so the doctor knew that she had only about 6 months to live. She was in terrible pain, but she was so weak that a good dose of a pain-killer like ether or morphine would make her die sooner. She was delirious and almost crazy with pain, and in her calm periods, she would ask the doctor to give her enough ether to kill her. She said she couldn't stand the pain and she was going to die in a few months anyway.

Should the doctor do what she asks and give her the drug that will make her die? Why?

Some countries have a law that doctors should put away a suffering person who will die anyway. Should the doctor do it in that case? Why?

The doctor finally decided to kill the woman to put her out of her pain, so he did it without consulting the law. The police found out and the doctor was brought up on a charge of murder even though they knew the woman had asked him. What punishment should the judge give the doctor? Why?

Would it be right or wrong to give the doctor the death sentence? Do you believe that the death sentence should be given in some cases?

* * * * *

While all this was happening, Heinz was in jail for breaking in and trying to steal the medicine. He had been sentenced for 10 years. But after a couple of years, he escaped from the prison and went to live in another part of the country under a new name. He saved money and slowly built up a big factory. He gave his workers the highest wages and used most of his profits to build a hospital for work in curing cancer. Twenty years had passed when a tailor recognized the factory owner as being Heinz, the escaped convict whom the police had been looking for back in his home town.

Should the tailor report Heinz to the police? Would it be right or wrong to keep it quiet? Why?

Is it a citizen's duty to report Heinz? Would a good citizen? Why?

If Heinz was a good friend of the tailor, would that make a difference? Why?

Should Heinz be sent back to jail by the judge? Why?

* * * * *

Joe is a 14-year-old boy who wanted to go to camp very much. His father promised him he could go if he saved up the money for it himself. So Joe worked hard at his paper route and saved up the \$40 it cost to go to camp and a little more besides. But just before camp was going to start, his father changed his mind. Some of his friends decided to go on a special fishing trip, and Joe's father was short of the money it would cost. So he told Joe to give him the money he had saved from the paper route. Joe didn't want to give up going to camp, so he thought of refusing to give his father the money.

Should Joe refuse to give his father the money? Why?

Does his father have the right to tell Joe to give him the money? Why?

Does giving the money have anything to do with being a good son? Why?

Which is worse, a father breaking a promise to his son or a son breaking a promise to his father? Why?

* * * * *

Several years later, two grown up brothers had gotten into serious trouble. They were secretly leaving town in a hurry and needed money. Alex, the older one, broke into a store and stole \$500. Joe, the younger one, went to a retired old man who was known to help people in town. Joe told the man that he was very sick and he needed \$500 to pay for the operation. Really he wasn't sick at all, and he had no intention of paying the man back. Although the man didn't know Joe very well, he loaned him the money. So Joe and Alex skipped town, each with \$500.

If you had to say who did worse, would you say Al did worse to break in the store and steal the \$500 or Joe did worse to borrow the \$500 with no intention of paying it back? Why?

Would you feel like a worse person stealing like Al or cheating like Joe? Why?

Who would feel worse, the storeowner who was robbed or the man who was cheated out of the loan? Why?

Which should the law be more harsh or strong against, stealing like Al or cheating like Joe? Why?

APPENDIX B

Values

ACCOMPLISHMENT

(achievement)

A COMFORTABLE LIFE

(a prosperous life)

EQUALITY

(brotherhood, equal opportunity for all)

FAMILY SECURITY

(taking care of loved ones)

FREEDOM

(independence, freedom of choice)

FRIENDSHIP

(close companionship)

HAPPINESS

(contentedness)

INNER HARMONY

(freedom from inner conflict)

INTEGRITY

(honesty, being consistent with one's values and principles)

MUTUAL TRUST

(social relationships based on trust)

PEACE

(a world or society of non-violence)

RELIGION

(devoutness, following religious values and standards)

SELF-RESPECT

(self-esteem)

SOCIAL ORDER

(an orderly society maintained by law)

SOCIAL RECOGNITION

(respect, admiration)

WISDOM

(a mature understanding of life)

APPENDIX C

Letter Cancellation Task

The subject's task was to strike out 4 of the 5 letter "A's" in each row. Fifty-two rows of thirty letters each were presented on a single page for each of the three performance sessions. There were five letter "A's" in each row. The rows of letters were arranged in two columns on the page. Row 1 and row 2 were placed on the same line, row 3 and row 4 on the same line, etc., so that subjects worked their way clear across both columns before starting the next line.

For example, the first six rows were as follows (remember that actually these constituted only three lines on the actual page used for the task):

1. WTBAPMAXDYRZIAOCJKAMNBVKWERTAW
2. LSEAYAPZMZOWMXASDFGHATTNAZHYTC
3. ZHYTAINNGPAMCVGUTANGAMKOLPHYAB
4. AEXCVBNMASDFGHJKAVYYZQERDABNHG
5. DJTUAWACHNLIQVHUEOMEGAMEHVBYYA
6. JFCAZMLLUAOYOALJPIYRWAXFYHOMAS

APPENDIX D

Self-Esteem Scale

Attitude Questionnaire - Part I

Please indicate how each of the following statements applies to you by blackening in the appropriate number on the IBM answer sheet. Use the rating scale from 1 to 5 which follows each statement.

Please mark every item.

1. How often do you feel inferior to most of the people you know?
 1. very often
 2. fairly often
 3. sometimes
 4. once in a great while
 5. practically never
2. Do you ever think that you are a worthless individual?
 1. very often
 2. fairly often
 3. sometimes
 4. once in a great while
 5. practically never
3. How confident do you feel that some day the people you know will look up to you and respect you?
 1. very
 2. fairly
 3. slightly
 4. not very
 5. not at all
4. How often do you feel to blame for your mistakes?
 1. very often
 2. fairly often
 3. sometimes
 4. once in a great while
 5. practically never

5. Do you ever feel so discouraged with yourself that you wonder whether anything is worth while?

1. very often
2. fairly often
3. sometimes
4. once in a great while
5. practically never

6. How often do you feel that you dislike yourself?

1. very often
2. fairly often
3. sometimes
4. once in a great while
5. practically never

7. In general, how confident do you feel about your abilities?

1. very
2. fairly
3. slightly
4. not very
5. not at all

8. How often do you have the feeling that there is nothing you can do well?

1. very often
2. fairly often
3. sometimes
4. once in a great while
5. practically never

9. How much do you worry about how well you get along with other people?

1. very
2. fairly
3. slightly
4. not very
5. not at all

10. How often do you worry about criticism that might be made of your work by whoever is responsible for checking up on your work?

1. very often
2. fairly often
3. sometimes
4. once in a great while
5. practically never

11. Do you ever feel afraid or anxious when you are going into a room by yourself where other people have already gathered and are talking?
 1. very often
 2. fairly often
 3. sometimes
 4. once in a great while
 5. practically never
12. How often do you feel self-conscious?
 1. very often
 2. fairly often
 3. sometimes
 4. once in a great while
 5. practically never
13. When you have to talk in front of a class or a group of people your own age, how afraid or worried do you usually feel?
 1. very
 2. fairly
 3. slightly
 4. not very
 5. not at all
14. When you are trying to win in a game or sport and you know that other people are watching you, how rattled or flustered do you usually get?
 1. very
 2. fairly
 3. slightly
 4. not very
 5. not at all
15. How much do you worry about whether other people will regard you as a success or a failure in your job or career?
 1. very
 2. fairly
 3. slightly
 4. not very
 5. not at all

16. When in a group of people, do you have trouble thinking of the right things to talk about?
1. very often
 2. fairly often
 3. sometimes
 4. once in a great while
 5. practically never
17. When you have made an embarrassing mistake or have done something that makes you look foolish, how long do you usually keep on worrying about it?
1. very
 2. fairly
 3. slightly
 4. not very
 5. not at all
18. Do you find it hard to make talk when you meet new people?
1. very often
 2. fairly often
 3. sometimes
 4. once in a great while
 5. practically never
19. How often do you worry about whether other people like to be with you?
1. very often
 2. fairly often
 3. sometimes
 4. once in a great while
 5. practically never
20. How often are you troubled with shyness?
1. very often
 2. fairly often
 3. sometimes
 4. once in a great while
 5. practically never
21. When you are trying to convince other people who disagree with your ideas, how worried do you usually feel about the impression you are making?
1. very
 2. fairly
 3. slightly
 4. not very
 5. not at all

22. When you think about the possibility that some of your friends or acquaintances might not have a good opinion of you, how concerned or worried do you feel about it?
1. very
 2. fairly
 3. slightly
 4. not very
 5. not at all
23. How often do you feel worried or bothered about what other people think of you?
1. very often
 2. fairly often
 3. sometimes
 4. once in a great while
 5. practically never

APPENDIX E

A COMPOSITE RANKING OF VALUES

FOR GENERAL PSYCHOLOGY STUDENTS AT THE UNIVERSITY OF ALBERTA

1. INNER HARMONY
2. HAPPINESS
3. SELF RESPECT
4. INTEGRITY
5. WISDOM
6. FRIENDSHIP
7. FREEDOM
8. FAMILY SECURITY
9. MUTUAL TRUST
10. EQUALITY
11. PEACE
12. ACCOMPLISHMENT
13. A COMFORTABLE LIFE
14. SOCIAL ORDER
15. SOCIAL RECOGNITION
16. RELIGION

APPENDIX F

Justification Sheet

1. Please indicate by checking the appropriate place, whether your ranking of Equality was High, Medium, or Low in importance.

_____ High (Ranks of 1-5)
 _____ Medium (Ranks of 6-11)
 _____ Low (Ranks of 12-16)

In the following space, please give the major reason or reasons for the importance you placed on equality (high, medium, or low importance).

Please indicate how you ranked the importance of Equality in relation to the importance of Happiness (equality higher, lower or about the same as happiness) and give the major reason or reasons.

2. Please indicate by checking the appropriate place, whether your ranking of Mutual Trust was High, Medium, or Low in importance.

_____ High (Ranks of 1-5)
 _____ Medium (Ranks of 6-11)
 _____ Low (Ranks of 12-16)

In the following space, please give the major reason or reasons for the importance you placed on mutual trust (high, medium, or low importance).

Please indicate how you ranked the importance of Mutual Trust in relation to the importance of Friendship (mutual trust higher, lower or about the same as friendship) and give the major reason or reasons.

APPENDIX G

Rating Sheet

1. Please indicate how satisfied you are with your original ranking of Equality by placing a check in one of the spaces (please put your check in a space, not on one of the dividing lines).

I am	☐	☐	☐	☐	☐	☐	☐	☐	☐
	very								very
	satis-								dissatis-
	fied								fied

with my original ranking of Equality.

2. Please indicate how satisfied you are with your original ranking of Mutual Trust by placing a check in one of the spaces (please put your check in a space, not on one of the dividing lines).

I am	☐	☐	☐	☐	☐	☐	☐	☐	☐
	very								very
	satis-								dissatis-
	fied								fied

with my original ranking of Mutual Trust.

APPENDIX H

The Adjustment Procedure for Value Change Scores

In each of the tables below, blocks were set up on the basis of initial rank as indicated. The expected value of change scores are presented for each value in each block in each treatment (see Tables 1 - 4). For the first post-test these expected value of change scores were computed by first calculating the mean for each of the 3 levels of the type classification factor within that block. Then an unweighted mean could be derived by taking the mean of these 3 means. For the second post-test the expected value of change scores were simply the mean of all subjects in that block. This procedure was necessary on the second post-test because subject depletions left an insufficient number of subjects within each level of the type classification factor in each block. Adjusted scores were calculated by taking each raw score for each value, subtracting the appropriate expected value of change score, and adding a constant of the grand unweighted mean raw score across all levels of all factors in the design. The adjustments were made separately for each value in each treatment. The adjusted scores for each value were then summed.

Table 1
The Expected Value of Change Scores
for the Value "Equality" in
the Inconsistency with Authority Condition

	Block 1 (Ranks 1-6)	Block 2 (Ranks 7-11)	Block 3 (Ranks 12-16)
First post-test change scores	-1.4	.7	4.1
Second post-test change scores	-1.6	.3	3.0

Table 2
The Expected Value of Change Scores
for the Value "Mutual Trust" in
the Inconsistency with Authority Condition

	Block 1 (Ranks 1-5)	Block 2 (Ranks 6-9)	Block 3 (Ranks 10-16)
First post-test change scores	-1.1	1.3	4.7
Second post-test change scores	- .5	.9	5.1

Table 3
The Expected Value of Change Scores
for the Value "Equality" in the
Rational Inconsistency Condition

	Block 1 (Ranks 1-6)	Block 2 (Ranks 7-11)	Block 3 (Ranks 12-16)
First post-test change scores	-2.4	1.6	3.5
Second post-test change scores	-2.5	1.4	4.2

Table 4
The Expected Value of Change Scores
for the Value "Mutual Trust" in
the Rational Inconsistency Condition

	Block 1 (Ranks < 9)* (D < + 2)	Block 2 (Ranks < 9) (D > + 2)	Block 3 (Ranks > 9) (D < + 2)	Block 4 (Ranks > 9) (D > + 2)
First post-test change scores	-1.0	-.3	3.2	6.2
Second post-test change scores	- .8	.7	3.3	4.4

*Where D is the rank assigned to the value "happiness" minus the rank assigned to the value "mutual trust".

APPENDIX I

An Unweighted Means Analysis of First
Post-Test Raw Value Change Scores

An 2 x 3 x 3 (treatments x types x blocks) unweighted means analysis of variance (Wiener, 1962) was carried out on the sum of the first post-test raw value change scores for the two values. The third factor of three levels of blocks was based on the initial ranks summed for the values of "equality" and "mutual trust". The slope of the regression lines for the relationship between initial rank and value change were approximately equal for both values in both treatments, therefore it should be appropriate to use the summed scores for initial rank and value change. All subjects whose summed initial rank scores were fifteen or less were placed in Block 1; those whose scores were in the range of sixteen through twenty were placed in Block 2; and those whose scores were twenty-one or greater were placed in Block 3.

The means for the first post-test raw value change score analysis are presented in Table 2, and the results of the unweighted means analysis are presented in Table 3. As the results of Table 3 indicate, the predicted interaction between types and treatments did not reach significance. As in the adjusted score analysis, there is little difference between the mean value change scores for Type IV subjects in each treatment. As predicted, post-conventional subjects tended to change more in the rational inconsistency condition. However, these results did not reach significance by the method of orthogonal comparisons.

Table 2
First Post-Test Raw Value Change Score Means

Blocks	<u>Inconsistency with Authority</u>					<u>Rational Inconsistency</u>						
	Type	III	Type	IV	Post-	Type	III	Type	IV	Post-		
	n	$\bar{X}$	n	$\bar{X}$	conventional	n	$\bar{X}$	n	$\bar{X}$	conventional	n	$\bar{X}$
1	5	1.60	3	.67	5	-2.60	3	2.33	4	-4.25	4	-2.00
2	5	4.00	4	3.75	3	.67	3	2.67	2	2.00	4	2.25
3	2	11.50	3	6.00	3	5.33	3	6.67	3	12.33	3	6.67
$\Sigma \bar{X}/3$		5.70		3.47		1.13		3.89		3.36		2.31

Table 3
Unweighted Means Analysis of
First Post-Test Raw Value Change Scores

Source	df	SS	MS	F
A (treatments)	1	.90	.90	-
B (types)	2	91.51	45.75	2.35
AB	2	21.60	10.80	-
C (blocks)	2	761.80	380.90	19.52**
AC	2	11.48	5.74	-
BC	4	32.48	8.12	-
ABC	4	122.99	30.75	1.57
ERROR	44	858.48	19.51	
TOTAL	61	1901.24		

** p < .01

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